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GAMES NEWS 16

Teach your Spectrum 11 000 words and then let it beat you at Scrabble. Mad Martha reappears in what promises to be computer gaming's longest running soap opera.

VIDEO GAMING 20

Up to four pages with a feature on Atari's new joystick, joystick joy reviews and much more news looking off with a run-down of the new Supercharge range of cassette games.

ARCADE ACTION 30

How do you rate the world's video-cassette nation. We chart some US high scores for reference and look at Top Top Donkey Kong in 3D.

REVIEWS 136

T.I.'s Panzer talks itself into our column and Ultimate have come up with arcade winner in Jigsaw.

NEXT MONTH 140

There's news of our Summer Holiday competition launched Next Month with £5 000 as first prize.

Listings

DONKEY KONG JUNIOR 32

See of Kong comes to the screens in glorious Spectrum colour in search of his big daddy captured by the unscrupulous Mario. Can you stand the suspense!

SHOOT OUT 36

If you like taking potshots at those bobbing ducks at fairground shooting galleries you'll love this game.

SPIKE ATTACK 44

You'll have to get the point of that game quickly if you want to survive the deadly alien spikes. For Dragon owners who enjoy a touch of acupuncture treatment.



GHOST TRAP 102

You play a dangerous game when you go hunting the man-eating ghosts. But it's fun attempting to lure them into your deadly laser-traps. A haunting experience for Vic owners.

ZAX V 104

Mystery and adventure on a planet time has passed by. Can you discover the identity of the double agent sending secrets which could undermine the Spectrum (ZX81) federation?

PLUS GAMES EXTRA 63



SQUONK 48

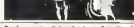
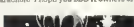
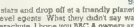
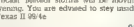
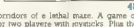
A battle of wits within the corridors of a lethal maze. A game of strategy and quick thinking for two players with joysticks. Plus the "best title display" our reviewers has seen on an Atari.

METEOR 52

And now for the weather forecast. Meteor storms will be moving across the country towards evening. You are advised to stay inside and defend the city on your Texas II 99/4e.

CATCH 68

Why not take a day trip to the stars and drop off at a friendly planet? That's what they said at the travel agents. What they didn't say was that we'd have to drop off by parachute. I hope you BBC A owners are ready with the net!



Screen gems...

There's a new look to Video Screens this month. For a start we've changed its name to Video Gaming and we've boosted it up to four pages.

There you'll find news, competitions, a full page of reviews and a different feature every month: kicking off with the tale of the tail-less joystick. It starts on page 20.

Pure computer buffs won't be losing out though as we've added extra pages — 32 of them — devoted purely to listings, to keep C&VG the best listings magazine you can buy.

Donkey Kong and the brilliant 3D labyrinth will brighten up Spectrum owners' lives; there's 3D Road Race and Frogger for T.I. owners; Short Circuit on the Sharp and a host of other games for other computers.

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It's back! The Seventh Empire rises again with more tales of medieval plagues and space treachery

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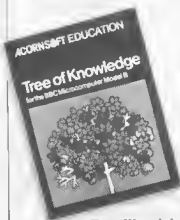
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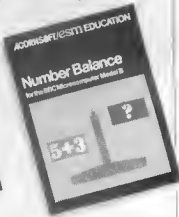
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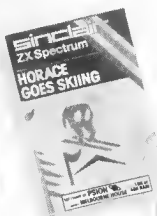
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2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092.



Please drop us a line at: Computer and Video Games, EMAP, Durrant House, 8 Herbet Hill, London EC1R 5JB

PLAYING BY MAIL

Dear Sir,
Due to being unbearably bored during the last couple of weeks, I have decided to take part in a play-by-mail game. I would be grateful if you could give me the addresses of people I should contact to get further information.

Steven Mill
Broughty Ferry,
Dundee.

Editor's reply: There are several games you can play, Steven. Starlord by Mike Singleton, I Rake Hey Close, Moreton, Wirral, Merseyside, Voracious Wars by John Nicholson, 71 Juniper, Birch Hill, Bracknell, Berks. Or for free you can enter our own Seventh Empire play-by-mail game in the July issue.

LOW COST SPECTRUM

Dear Sir,
I have just read that the ZX Spectrum will be going down in price. Does this mean that it will now be cheaper to convert my 16K Spectrum to 48K?

Simon Gill,
Bellbroughton,
West Midlands.

Editor's reply: The price of the Spectrum goes down from May 2 1983. A 16K Spectrum will cost £99.99, making it the first under-£100 colour micro to be available. The 48K model is reduced to £129.99. The cost of an upgrade to 48K is reduced from £60 to £40.

Orders for a Spectrum placed by mail order after April 7 were frozen, so if you ordered a Spectrum after that date you should be receiving a refund.



DEFENDER DEFENDED!

Dear Sir,
As a proud Atari 800 owner I must complain strongly on your review of the Defender cartridge for this machine.

According to me, the graphics are spectacular for the 16K program and equal to those of Acornsoft's 32K Defender program (Planetoids) for the much over-rated BBC in every way.

There is no question of which is easier to play because playing with six keys at once on the BBC keyboard is impossible. Lastly, on the question of the best quality software, it is known in every home computer selling nation that the Atari has the most and certainly the best quality software of any available computer and it does not only come from Atari Inc. but from a variety of companies.

It is not like the BBC where you are restricted to Acornsoft software if you want programs of any reasonable quality.
Paul Ippaso,
Bartow-on-Soar,
Leicester.

Editor's reply: Thanks for your comments Paul, but as a keen Defender fan I can only defend my reviewer by saying that I also prefer the BBC version of Planetoids. The action is more reminiscent of the arcade original and the screen scrolls more neatly.

Also you don't mention the fact that Atari's Defender is much more expensive than Planetoids.

Still, perhaps we have all been spoilt by arcade Defender anyway.

SPECTRUM STICKS?

Dear Sir,
Can you get joysticks for the Spectrum?

M. Law,
Sutton Coldfield,
West Midlands.

Editor's reply: There are many companies selling joystick interfaces for the Spectrum. Try Fuller, Kempston or AGF. Wardware. A Spectrum Joystick review soon.

LOCATIONS, ROUTINES. . .

Dear Sir,
I am writing to tell you about some useful memory locations and routines which may be of some value to those of your readers who own a Sharp MZ-80K. They are listed below.
POKE 10167,1 removes the PEK protect from Sharp Basic.

Type SC when you switch on and a beep will sound when you hit a key.

Type SS and the beep will stop.

POKE 58555,0 will blank the screen whilst retaining anything on it and POKE 58555,1 will reactivate the screen.

PRINT AT X,Y, can be simulated by POKE 4465, X:POKE 4466, Y:PRINT "character".

POKE 4464,1 will go into the small alphabet mode without having to press sm/CAP. POKE 10632,1 before saving a program will cause the program to run automatically after loading.

The location of the keyboard buffer is 17828, but this only holds the ASC11 number of the key being pressed if GET is issued before hand, thus GET AS:AS-CHRS (PEEK(17828)) can be used in a program so that movement of your ship or whatever is continuous.

Finally to make a security copy of Sharp Basic, supply load the Basic and type POKE 10167,1:USR(33):USR(36) and hit CR.
Ian Clarke,
Stoke on Trent,
Staffordshire

REVERSI REQUEST

Dear Sir,
I think it was in the March 1982 edition that Gordon Stevens gave us an excellent Reversi (Othello) program for the ZX81.

However, this used some machine code and peeks for which there does not seem to be direct Spectrum equivalents.

Any chance of a Spectrum "conversion kit" for this very good program? I want to try to beat the swine!
G N Thorne,
Walsack,
Hull.

Editor's reply: I suggest that you try and get hold of a ZX81 manual with all the system addresses in. Most of the variable names are the same as those for the Spectrum, and it's simply a matter of replacing the locations.



Mission Asstoid
Mystery House
Mouskattack
Napoleon's Campaign
Olympic Decathlon
Pegasus II
Pest Patrol
Phantoms Five
Phoria
Pinball
Pursuit of the Graf Spee
President Elect
Repton
Robot War
S E U I S
Saigon II Chess
Scrabble
Skiing 3D
Snack Attack
Snake Byte
Sneakrts
Soft Point Adventure
Space Eggs
Swashbuckle
Threshold
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[illegible]

	Name
	Address

B.20



MAILBAG



INTERTON INTERFACE

Dear Sir
I own an Interton VC4000 video games console marketed in the UK by Hammer Ltd. Could you please inform me whether it is, or will be, possible to in some way connect (via an interface or other means), the console handsets to the Sinclair ZX Spectrum which I have just purchased
Gary Wilson,
Colchester,
Essex.

Editor's reply: Most of the joystick interfaces sold are sticks with two potentiometers inside. If the Interton sticks are this type, then it's just a matter of making sure that the wires go to the correct pins. Details should be provided with each interface.

ATTACK ON ATARI!

Dear Sir,
After reading your current issue I find myself with enough material for four or five letters. I'll try and cram the lot into one. Lucky you. BBC v Spectrum. All your well heeled correspondents with Model Bs seem to have missed the point of the original letter which was — if £399 is all you have to spend then a Spectrum plus peripherals is better value than a BBC with none.

I believe the letter then went on "and ITV make the best TV programs in the world".

Actually the best TV programs on ITV are shown on Channel 4. Draw your own conclusions.

Atari v Colecovision. When Atari were flinging writs at Activision, their excuse was that software was where the money was and they wanted to protect their markets.

I would have thought the Coleco/Atari adaptor was extremely unlikely to detract from Atari's sales.

One therefore concludes that they have a vested interest in keeping their legal dept. overworked.

Incidentally, if the pioneers of

record and film had adopted the same attitude as Atari, I very much doubt if there would have been any Bros. Warner to own Atari in the first place.

Atari v Imagic. Atari must be daft if they think we can't tell the difference between Demon Attack and Phoenix. If there is any similarity then it's probably because they can't fit arcade Phoenix into the Atari's memory.

What's more, I'm getting sick and tired of Atari chucking writs at everybody. If they don't cut it out, I'm not going to buy any more of their products. Intellivision cartridges are cheaper anyway. So there.

Interesting bit of news that. Just one thing. Didn't I write and tell you about them six or seven months ago?

Duke Roberts,
Temple Cowley,
Oxford.
Editor's reply: But we had to wait until they were about to come out Duke! Still, thanks for your views.

WE NEED REVIEWERS

Dear Sir,
I have recently upgraded my Spectrum from 16 to 48K and am now ready to take on the gaming world.

Being a regular reader of your magazine, since long before I ever persuaded the powers that be to buy me my first computer, I am writing to see if you need any more help in compiling your reviews section or testing games.

I have a printer and will be pushing for the marvellous microdrive as soon as it appears.

Rebecca Calwell,
Edgeware,
Middlesex.

Editor's reply: Yes Rebecca, we can make use of your talents we are still finding we have more tapes than our current resources can cope with on four microcomputers. These are the Spectrum, Vic-20, Dragon 32 and BBC. If anyone out there is interested please write with details of the equipment you own.

GORILLA GRIPES

Dear Sir,
I am writing to you concerning the letter you published in your May edition from Ian Reddick of Kirkaldy, Fife, about C Tech's Crazy Kong.

I would just like to say that I totally agree with him. I also believe that the advert is meant to be misleading.

Sometimes I find it impossible to load the 48K version, but when I do I never seem to be able to reach the final stage as every time I complete a stage I lose a life and, I assume, return to the beginning. Could this be a bug?

The game is very fast and definitely unplayable. I too waited for over a month for my copy to arrive and have also decided to return it to C Tech with a letter of complaint.

M. Yates,
Ilkeston,
Derbyshire.



OVERPRICED CARTRIDGES

Dear Sir,
I am writing to complain through you to some of the large Atari 400/800 software producers. I have had my computer for about nine months and have only been able to purchase two games cartridges due to the really high prices that are charged for these items.

The price for a cassette game for any other computer such as the Vic-20 or ZX

Spectrum is about £5-£10 which seems very fair, but nearly all Atari cassette games are nearer or over the £20 mark which I am sure many other Atari 400/800 owners think is extravagant.

One of the reasons I bought the Atari computer was for its graphic capabilities and I now find that I can't afford games at these prices.

Have you or any other Atari 400/800 owners any views on the matter? I think the Atari computers have been out long enough for games prices to be lowered considerably.
Eddie Mitchell,
London,
NW5

Editor's reply: Thanks for your comments Eddie. I agree that Atari software is not so superior to other micros that it justifies these large prices. Perhaps other Atari owners will give us their views.

AMPLIFIED SPECTRUM

Dear Sir,
I am an owner of a ZX Spectrum and find that the sound or lack of it irritates me more than anything else. But now I have discovered a way of amplifying the sound through the cassette recorder. The sound coming from the computer is still present but additional sound comes from the cassette recorder.

To amplify the sound through the cassette recorder, the Spectrum's ear plug should be plugged into its socket on the machine. The other earplug should be plugged into the MIC socket of the cassette recorder.

The cassette recorder is then set to play and, then PAUSED via a pause button on the cassette recorder. The sound output from the cassette recorder can now be controlled using the volume control.

Thus ability to increase the Spectrum sound improves all games where sound plays a prominent part and at times can even improve scores.
Sarbjit Gidda,
Spondon,
Derby.

VOTE FOR OUR FIVE GOLDEN JOYSTICKS

Five Golden Joysticks are the treasured prizes which British software houses will be competing for this autumn.

Computer & Video Games is sponsoring the Golden Joysticks Awards which we hope will become the Oscars of our games industry.

This is your chance to nominate a company which has given you good service or earn due recognition for a game which has provided hours of enjoyment.

We feel our industry is crying out for quality games to be rewarded and hope it will give our software house something to aim for when they feel they have come up with a winning idea.

In America the Arkies Awards tend to go to US soft-

ware companies and we felt it was time that the best of British was given the chance to prove itself.

A C&VG Golden Joystick will be awarded in five categories and announced during the Brainware consumer electronics exhibition in November.

The five Joysticks will be awarded as follows:

Best Arcade-style Game goes to the cassette or cartridge which proves itself the most addictive and thrilling game in 1983.

Best Strategy Game is the title bestowed on the finest cassette or cartridge to test the mind rather than the trigger finger.

The Best Original Game Idea is an award close to the heart of anyone who has written as many Pacman reviews and news stories as I have. I hope the award inspires companies to introduce new ideas.

Software House of the Year goes to the company which has won itself the

best reputation for service, quality game and entertaining adverts.

And finally the **Game of the Year** The most coveted Golden Joystick awarded to the game which most impresses the judges.

Initially we are leaving the judging up to you and want you to tell us your nominations in any or all of the categories. Don't feel you have to fill in a category where you have not seen anything worthy.

For the title **Software House of the Year**, we will check out your suggestions with the dealers and also set some devious tests on the service side for the main contenders.

And while the other Joysticks can only be won by British-based companies, we are leaving this category open to overseas distributors.

We want your nominations in as quickly as possible. So please cut out the form below, fill in those categories where you feel strongly that a company deserves an award and send it off to: The Golden Joystick Awards, Computer & Video Games, Durrant House, Herbal Hill, London EC1R 5JB.



Please accept the following nominations for the Golden Joystick Awards.

(BLOCK CAPITALS PLEASE)

1) Best Arcade Type Game:

By (Software house):

2) Best Strategy Game:

By:

3) Best Original Game:

By:

4) Software House of the Year:

5) Game of the Year:

By:

Name:

Address:

SPACE, THE LATE FINAL CROSSWORD!

High scores abounded on the Delta Rocket to Venus as the crew whittled away at the headline of the last newspaper they saw on Earth.

Since Trevor Turan launched the flight and the competition in our May issue, pictures of the ACME Spaghetti rocket filled with words reduced from the headline "Major Venus Flight" have been soaring into the office.

Top scorer was Mrs J Dixon of Glebe Road, Wickford in Essex with 1,260. Close on her heels was Gavin Copeland of Cedar Road, Ayre with 1,200 and K Austin of Meades Lane, Chesham Bucks with 1,180.

To these three we are sending a Milton Bradley board game.

We are undertaking to provide games cassettes for your home computer if you can beat Trevor Turan's devious dice problem on page 96 of this issue.

We can't promise to provide your first choice cassette but we'll do our best. Please, include details of which game for which computer you would like as a prize.



THE ELECTRONS ON FOR BUG-BYTE

If you'd seen as many space invaders come and go as our Bugs have, you too would be longing for a new kind of game.

They've been haunted by the ghosts of long dead Pacmen until they were sick of power pills; swooped on by untold Galaxians and Scrambled more craft against mountainsides than they care to remember.

At a recent meeting of the League of Blasted Bugs, it was unanimously decided to get right to the heart of the problem of original computer games ideas by asking *Computer & Video Games* readers to write in and tell us about the games they would like to see on their computers. Give your ideal game a title and that all-important theme.

Explain how the game would run, the objectives and where

the skill comes in.

And who better than Bug-Byte, one of Britain's best established computer games companies to act as patrons for this foray into unexplored gaming territory.

Liverpool based Bug-Byte are so keen to pave the way for a new breed of games that they have undertaken to put up an Electron computer — the long-awaited new offering from Acorn Computers — as a prize for the best idea.

They will also throw in any attendant software which accompanies the proposed July launch of the Electron.

Acorn's early promises for the Electron include: BBC Basic, compatible with the BBC computer; a standard typewriter keyboard; 32K of RAM memory; eight colour graphics; two character ranges of either 20 or 40 characters per column down 25 rows; a screen resolution of 320 x 200 pixels for detailed graphics; and a fully programmable sound generator.

The prize goes to the writer of the best new games idea we receive

into the C&VG offices by July 16th. An added bonus, if any of the top 20 entries are considered good enough by Bug-Byte, is that they will produce and market the game, paying royalties to the authors.

As runners-up prizes, five entrants will be offered two software cassettes from the Bug-Byte range of BBC, Spectrum, ZX81, Oric and Vic games. See the panel below for details of how to enter and the competition rules.

ARTIFACTOR COLLECTS

Arkrai the artifact collector was the winner of the free C&VG play-by-mail game of Starweb.

The game came to a close this month when Arkrai went above the desired number of points to claim victory over the 14 other empire builders, berserkers, piraten, apostles and merchants that peopled the Starweb galaxy.

A full report from one of the vanquished next month on C&VG's competition pages.

HOW TO ENTER OUR ELECTRON CONTEST

To win Bug-Byte's Electron, send your games idea in with a title and the themes.

Let us know what sort of game it is and go into extra detail if it doesn't fall into the usual categories.

Remember we are looking for originality so try to give your game a new twist. A picture of the screen display might help our judges to get

a better idea of the game, but it isn't necessary. Please don't skip on the detail, the more you explain how it works on the computer the better.

Send it to: The Electron Competition, Computer & Video Games, Durrant House, Herbol Hill, London EC1R 5JB.

All entries will be the property of Bug-Byte and they reserve the right

to develop and market the idea on a royalties basis. No employees of EMAP, Bug-Byte or their relative may enter the competition. The judges' decision is final and no correspondence can be entered into.

The closing date is the 16th of July and please ensure that all your pieces of paper include your name and address.

NEW PRODUCTS NEW PRODUCTS NEW PRODUCTS NEWS

SPECTRUM GETS THE BIG VOTE

GENERAL ELECTION

Will she won't she? That's the question being debated over lunch, dinner and tea at Westminster as 635 MPs try to work out when Maggie will call the General Election.

Some say June, some September, and others believe she'll hang on to the New Year.

Whenever she does decide to go to the country one thing is clear, Spectrum owners will be ready for her.

This latest game for the Sinclair machine enables you to experience some of the excitement of the great contest in your own home.

Choose your favourite party—either Labour, Conservative, SDP, or Liberal Communists, Ecologists, and Official Raving Loonatics need not apply. Once you have picked your party you are ready to play this computer-ised board game.

As you move around the board you land on squares which represent key constituencies in the provinces. Depending on how you place the important issues in order of priority the seat will be won or lost—with the computer measuring your answers against the correct formula stored in its memory.

To help you plan strategy the computer also has a series of opinion polls and charts which can be called up to show you your standing with the electorate.

General Election runs on the 48K machine and is available from Bug Byte of Liverpool at £6.95.

If taking on the Iron Lady in a tussle at the polls is not enough excitement for you then Bug Byte's other Spectrum release this month will take you to hell and back.

Styx challenges you to get safely across the river of the underworld, rendezvous with a mysterious monk, and get back across the river again. As you travel you will have to do battle with monsters of land and sea.

The game runs on the 16 or 48K machine and is in the shops now at £5.95.

Also on the Liverpool pipeline is a new game for the Spectrum called Manic Miner, Spectrum Pool, and an original game for the BBC 32K called Sea Lord.



SOME ANIMAL MAGIC FOR THE BEEB

CAROUSEL

Animals are the main characters in Accinsoft's June releases. These are ducks and owls for you to take pot shots at in Carousel—a simulation of the fairground animal stall.

Take pot shots at these feathered targets as they bob and weave in front of your gun barrel.

Frogs also jump into the picture in Hopper—a Beeb version of the popular arcade game.

For those of you unfamiliar with the game you have to get your cute little frog safely across a busy road and swirling river. Both games run on the Model B and are in the shops now at £3.95.

A minimum of two games a month have been promised by the premier Cambridge-based games people.

THEIR LIVES IN YOUR HANDS!

RAOAR CONTROL

The universal appeal of flight simulation programs has resulted in an increasing number of air traffic control programs being released.

The BBC model B is the latest beneficiary of one of these games from Software For All of London.

The game enables you to try your hand at one of the most high pressured jobs of all—controlling the landings and take-offs at a busy airport.

In Area Radar Controller you are responsible for two landing strips. You must give information to the pilots on altitude, wind speed and other landing conditions.

Any slip-ups will be punished with the sack so you will need all the concentration you can muster if you want to make the grade at this tough job.

The game is available now from the Rorderd firm at £7.95.

Software For All are also looking up to write games for the Dragon and have launched their range with an Othello program.

HONEYMOON WITH A MAD WOMAN!

MARTHA'S RETURN

Remember the night poor little hen-pecked Henry flipped and blew the housekeeping on a night of gambling and drinking at one of the local sin bins?

His bossy wife—Mad Martha—didn't like it one bit! Last we heard she was still chasing after him with an axe. But now we know how the domestic story end-

ed. Happily you'll be pleased to know.

After a lengthy session with the marriage guidance councillor both parties agreed to forget their differences and now marital bliss has been restored to their happy home.

For Henry's part he has pledged to spend less time on the golf-course, less money in the bar, and never to darken the doorway again of the Blue Lady Casino.

Martha has also made a promise. To increase Henry's pocket money and to restrict the usage of the family axe to the chopping of fire wood.

To cement the new bond Martha and Henry are off on a second honeymoon to Spain where, according to C&VG's Spanish correspondent, Martha has a half-brother called Manuel who is a waiter at the hotel they



NEW PRODUCTS NEW PRODUCTS NEW PRODUCTS NEW GAMES NEWS

are booked in for the holiday.

But does Martha know about this stranded member of her family? Will Henry be able to stay out of the Spanish gambling dens? And has Martha pecked a precautionary axe amongst her staves and coisats?

Will Mad Martha and Henry become the Ken and Deirdre of the computer games world?

All will be revealed in Makrogan's sequel to Mad Martha which is lined up for release in July.

The company are not sure what to call the game and a price has yet to be decided, but it is likely to be around the £6 mark for the 48K Sinclair Spectrum.

REVVING UP FOR THE RALLYCROSS

MOTOR MANIA

Rallycross comes to the screen of your computer in the shape of this driving game for the Commodore 64.

You must drive your car as far as you can along motorway, B-road and dirt track sections, avoiding the various hazards — which include broken glass, potholes, logs, avalanches and other traffic.

A full dashboard display is produced on the screen with speedometer, fuel gauge and mileage.

Motor Mania runs on the Commodore 64 and is available from Audiogenic stockists at £8.95.

Also released this month by Audiogenic for the 64 is Renaissance — a version of Othello and a chess program modestly called Grand Master. Renaissance is available at £8.95 and Grand Master £17.95.

JOIN THE ARCADE JET SET

JET PAC

A team of ex-arcade game designers from Leicestershire have come together to form a brand new computer games soft-

ware house called Ultimate Play the Game. The company's first offering for the Sinclair Spectrum is a game called Jet Pac.

You have to assemble the three sections of the rocket and then fuel it and blast-off to the next planet.

Jewels and gold are also to be found on the planets and can be picked up to score extra points.

You have a powerful jet pac on your back and can fly all over the screen searching for the various bits of the space ship.

Two ledges, apparently suspended in mid air, make a good resting place for your little man as he continues his search.

No space game is complete without a nasty tribe of aliens out to get you and Jetpac is no exception to this.

To protect yourself you are armed with a powerful laser gun which can fire left or right.

I played the game using the keyboard but it must be much better and easier to control the action, with a joystick.

The game runs on any Sinclair Spectrum and is available from Ultimate Play the Game of Ashby de la Zouch, Leicestershire, at £5.50.

FRANTIC FUN WITH MONSTERS!

PANIC

Don't Panic! Just keep digging holes for those monsters and watch them tumble into the traps. Then bonk them on the head with your pick axe and you are safe!

Well — not quite safe, as some of these monsters are tougher than others. The easy ones can quite easily be buried by making them fall through one level.

The really tough old boots will just get up and walk away if they only fall through one level and must be made to crash through several.

Sounds familiar? Arcade fans will recognise this game as the early classic coin operated game — Alien Panic.

The game has now been converted for home use by Sinclair Spectrum owners.



Spectrum Panic is the latest game from Hewson Consultants — the authors of Nightlife. It runs on the 16 or 48K machines and is in the shops now £4.95.

Also new from Hewson for confirmed computer pilots is an air traffic control simulation which enables you to try your hand at the nail biting job of controlling the comings and goings at a busy airport.

Adventure enthusiasts have also been included in the latest batch from Hewson in the shape of a 48K graphic adventure called the Quest. The program is available now at £7.95.

ORIC AT A LOSS FOR SOFTWARE

AWARI

Alias poor Oric — your software is thin on the ground. Not much to choose from yet on the space

invading, ghost gobbling adventure seeking, alien blasting front yet for this new computer.

Despite the shortage two games have arrived on the Games News desk for this machine. And although they don't involve blasting aliens the games will make you think!

Awari is a computerised version of the ancient African pebble game. Several levels of play enable you to play against a friend or, if you're feeling confident, you can take on the computer at Witch Doctor level.

For those unfamiliar with Awari, it is based on a tribal strategy game of moving pebbles around a series of bowls.

Another strategy game makes up the second Kenema offering Othello, dealt with in our columns as Reversi, the counter capturing game of skill, which computers are particularly good at.

The games are available from Kenema Associates Ltd, Worle, Avon, at £6.50 for Othello and £5.50 for Awari.

NEW PRODUCTS NEW PRODUCTS NEW PRODUCT GAMES NEWS

ON THE RACE TRACK IN THE DARK!

OVERDRIVE?

Switch into overdrive with this racing simulation for the Sinclair Spectrum.

The game is still on the drawing board but we can reveal that you race a car through the night. Red cat's eyes mark the borders of the road. You control the car using the keyboard, and face the challenges of the race track.

The game is available from Abbex Systems of London at £5.95 although a final decision on the game's title is yet to be made.

Also new from Abbex this month is a deluxe version of Gallopers for the 48K machine and a 16/48K version of the popular arcade game — Scramble.

Abbex have also branched out onto other computers with their first game for the Commodore 64 — a light simulator at £7.95.

DON'T STICK YOUR HEAD IN THE SAND

JOUST

In days of old when knights were bold they rode around on ostriches. Yes, ostriches. What's that? You've never seen a knight riding one of these bad-tempered birds.

Well, just look out for this latest conversion of hit arcade game — Joust.

You play the part of the good knight on his trusty ostrich armed with a lance and doing battle with the dark lords on their bnz zards.

The Dark Lords are no easy opponents as they have been programmed to predict your next move and lay traps to ensnare you.

Softex have also looked to the arcade for the idea behind their second new game this month.

Called Firebirds — it's a shoot 'em up hybrid of arcade



lavourites — Phoenix and Firebirds.

An assortment of aliens have to be wiped out before you get to their home base.

Joust and Firebirds run on the Sinclair Spectrum in 16 or 48K and are available from London-based Softex at £5.95 each.

Dragons meet Monsters in Softex's first release for the home-spitting micro. The idea of the game is to get your little man safely through several levels to the bottom of the screen and pick up a power pill. Take this safely back to your craft before your oxygen runs out or you get nabbed by one of the monsters.

Monsters is based on the arcade game Pencil, where you have to dig holes for the monsters with an ice axe. In this Dragon conversion the pick axe

is replaced with a laser gun.

The game runs on the Dragon 32 and is available now from Softex at £7.95.

KNOCK SPOTS OFF YOUR SPECTRUM!

DOMINOES

Put on your cloth cap, dogs and mole-skin trousers and toddle off to the Dog and Ferret for a game of Dominoes.

Or, if it's raining, stay at home and take on your Spectrum with this latest game from brand new software house — Micromega.

The computer deals the dominoes and plays the double-six to start the game.

Normal rules apply and you'd better not cheat as the computer has been programmed to spot any dubious moves.

There is a strong flavour of the casino in Micromega's other releases, including a Roulette cassette and game called Monte Carlo which features pontoon and a version of the American gangsters dice-rolling game — Crap.

The games run on the Sinclair Spectrum in 16 or 48K and are available from the London-based firm at £5.00.

MARIO MEETS THE MAD APE — AGAIN!

DONKEY KONG

Mario and the ape are at it again. Fighting for the hand of a blonde stript.

If you've read Games News before, you should know the story-line backwards by now — ape kidnaps girl, takes her to top of steel fortress, gallant Italian carpenter comes to rescue armed with mallet.

So what's new? A version of the game for the BBC model B that's what.

This version of Donkey Kong from Micro Power of Leeds has four screens and many of the features of the arcade original including barrels, fireballs, cus-

tered ples and moving elevators.

Other arcade game conversions for the Beeb include a game called Painter which is a version of the loony Amidar — with pigs, painrollers, and fierce tribesmen.

Scramble fans are also catered for in the shape of Moon Raiders. This scrolling shoot 'em up has six sectors which must be flown through, complete with various obstacles — bomb and fire and keep an eye on your fuel gauge.

The games are available now from Leeds-based Micro Power at £5.95 plus VAT running on the BBC model B.

JOIN TRON INSIDE THE MICRO

ESCAPE MCP

Tron is back inside the computer — but this time it's not a fictional machine but none other than your Vic-20.

Escape MCP is based on the Walt Disney feature film and challenges you to find your way to the Master Control Program.

To stop you doing this the MCP is patrolled by robots who do not need to follow the maze-like route of the silicon chip that you have to follow — but can zoom straight towards you.

If battling it out with the computerised baddies of the 21st century is not enough excitement for you and your Vic why not join the Peritoopers.

In this game you have to stop the enemy who are dropping their crack regiment into your territory from helicopters.

A batch of new games are being released this month by Rabbit including a Pecman-type game called Pekacuda, Matter Splatter — an original arcade style game which challenges you to shoot barrels falling out of holes in a wall, and a driving game entitled Race Fun.

The games are available now from your local Rabbit stockist at £5.95 for the unexpanded Vic.

Escape MCP, and Pekacuda are also available for the Commodore 64.

ATARI VCS WIRELESS INCREASE THE PLAYING POWER OF YOUR ATARI 2600 VCS BY UP TO 50 TIMES



THE NEXT DIMENSION IN VIDEO GAMES

WHAT IS THE SUPERCHARGER?

The Supercharger plugs directly into the cartridge slot of your Atari VCS to increase its game playing power. With special digital electronics it multiplies the VCS RAM memory by 40 times from 128 to 6720 bytes. The Supercharger is a device in that it can accept programs that have been recorded on standard audio cassette tapes. These are faster and less expensive to design and market than chips in cartridges and most accessible level. The Supercharger is supplied with a standard sized cash play which will plug into the earphone socket of any domestic cassette tape recorder. Supercharger lets you play games with high resolution also as play superior games which could not normally run on an standard Atari VCS because of its memory limitations.

MULTI LOAD GAMES - For added complexity and depth
Cassette tape allows Starpath to offer unique Multi Load games. Games like Dragonstomper and Escape from the Madroom include several levels or one cassette. When you have finished the first part of a game you can then

continue the game in several distinct parts. This feature is particularly useful in adventure type games. Multi Load games offer complexity and depth that no conventional ROM cartridge game can currently compete with.

FREE CASSETTE - Phaser Patrol (Two screen game)

The Supercharger comes with a highly acclaimed and award winning Phaser Patrol game and costs only £39.00 including VAT.

Details of all the games are given below. For further information, complete and return the coupon below.

£39



PHASER PATROL (FREE)

Phaser Patrol is a single load game which is FREE with the Supercharger unit. A space game, it has two screens one featuring the intergalactic battlefield, (below left) and the other showing a Sector Map (below right). The game begins when the evil Dracons launch a surprise attack and you belong to the force which must prevent them from reaching earth. The sector map enables you to warp hop from one sector to another and it also tells you in what area the Dracons ships are so you will need to refer to it before you go into battle. As well as telling you the location of the Dracons the map shows you where your base is, these can tell you if you get into any trouble. When you have decided on the sector of Dracons to attack you can go to the second screen, the battlefield. On this screen you have a view of the war play area and a control panel to keep you informed of your progress. A one player game, Phaser Patrol is a highly detailed action packed cassette.



MUTANTS FROM SPACE

Single Load action from Starpath just as soon as you begin this game you will be under attack. You have to vaporize the mutant warriors before they overrun your home planet. Up to four can play and the screen keeps track of the highest score. As well as having nine difficulty levels and two speeds, Communal Mutants from Space (its full title), has got several features which make it an exciting game cassette providing a variety of options. The real skill in this game, however, is winning without using the special features that it offers you! Price £14.30+VAT=£16.45



FIREBALL

You are a juggler, and able to juggle anything from chira plates to despair! You task in this Single Load game is to smash wall after wall of blocks as you juggle with red hot FIREBALLS! When the ball comes down from the top of your screen, catch it, and then release it back at the wall of blocks. You can score up to a million points! Also, if you get to insufficient at one pattern of blocks, there are another four to choose from! Up to 4 players can take part in the game and up to 6 Fireballs can appear on the screen at once. Be sure you don't get burned! Price £14.30+VAT=£16.45



KILLER SATELLITES

You are the only cat pilot of the one rocket ship that can attack the earth from an alien attack of molten metal. The invasion has started. Have you the courage and skill to save mankind? A Single Load game, Killer Satellites is for 1 player featuring 2 difficulty settings as well as a rapid fire mode. Other features include a fuel level indicator, a laser overheat monitor which indicates the temperature of your gun, a global radar scanner and an energy barrier, which can be used to protect you from some of the alien projects. But not all of them! Price £14.30+VAT=£16.45



SUICIDE MISSION

Your mission in this game is to sneak down, smaller than a speck of dust, to do battle with a deadly hostile war dead within a human body. Equipped with a microscope submarine, head for an infection probe close to the heart and sword a light when you are heavily outnumbered. This is a real warlike at it's finest. Put at one of the many games and it divides into two. Fire and the ambulance. Name once more. A 1 or 2 player game featuring protective shields and two different shooting styles. Suicide Mission has three difficulty options. Price £14.30+VAT=£16.45



DRAGONSTOMPER

Dragonstomper is one of Starpath's Multi Load cassettes. As adventure game you'll be back through a time laden labyrinth to the age of warlocks and wizards. Your mission is to find the Amulet of the Druids. There are clues, but not all easy ones. There are peaceful lakes and forests as well as deadly traps and lurking somewhere in a very walled dragon. There are many rewards along the way, but few will reach the last goal. The MULTI LOAD feature gives you THREE separate game segments for longer, more challenging game play. Price £16.91+VAT=£19.45



ESCAPE/MINDMASTER

A Multi Load cassette, you task in this game is to escape from the alien Madroom - a 1600 story, which he has held you as a prisoner for study. To win your freedom, you must pass through six 3-D mazes, with each of them being more complex than the last. The first 3 mazes have problems to solve and some require intelligence tests. The last maze is a surviving specialist. As this game is so complex 1600 into your Atari as a time, it loads in 40,000 different game features of the extra play mode of the Starpath MULTI LOAD cassettes. Price £16.91+VAT=£19.45

VIDEO GAME CLUB FREE LITERATURE

In a fast moving market like video games, it is difficult to keep up to date with all the developments that take place. With new programmes and accessories being introduced at a fast rate by retail outlets at major centres, it is impossible to get all the information you require from one manufacturer alone. It is for this reason that we have set up our own video game club for the more popular video games and home computers, to keep you fully up to date with what is going on with your video game machine. As far as we know, Silica Shop are the only company to offer such a club but it is not surprising since we are the specialists. We assemble free literature for the Atari VCS, Atari 400/600 home computers, and Atari installation. Some of us will have club for Conquest, Aquarius and Vectris. So if you own one of these machines, fill in the coupon opposite and we will send you FREE OF CHARGE in the club relevant to your computer or video game.

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FREE LITERATURE

WIPAC

SUPERCHARGE A VCS AND LOAD UP GAMES FROM CASSETTE TAPES



The Staipath Supercharger is an expansion card for the Atari VCS. It does more than the standard home computer Ram-pack as it also enhances the graphics and colour quality of the 2600.

The expander plugs into the games port on the VCS. A lead connects the supercharger to a cassette recorder and the games are loaded from tape.

Only tape-based games can be loaded via the supercharger and the expander does not add anything to existing cartridge games.

The really exciting possibility opened up by the Supercharger is the prospect of a new range of cheaper cassette-based games.

The Supercharger itself comes with a free game — Phase Patrol, which features impressive Star Raiders type action.

Six games are so far offered in the Staipath range: Phase Patrol,

Vol, Dragonslumper, Killer Satellites, Communist Mutants From Space, Fireball, Suicide Mission and Escape From the Mindmaster.

More games are in the pipeline from Staipath and the company are busy drumming up interest in the Supercharger on the part of some leading American game firms.

Don't expect miracles from the Supercharger. Graphics and colour are undoubtedly better than on some of the earlier VCS titles — currently being sold off for as little as £10 — but some of the excellent colourful new games currently being released — (Pitfall, Vanguard and Ms Pacman) compare favourably with it.

The Supercharger also enables more moving characters on the screen than were previously possible on the 2600 though you would have to look

long and hard to notice this extra capacity during game — play.

The most impressive feature of the Supercharger is the multi-load facility. This enables several games to be stored on one cassette. They can be played separately as one-offs or, can be played in sequence, as part of one larger game.

Again in the Supercharger's favour it uses a quick automatic load system. Each of the games I tested, loaded in seconds last time. None of the hit-or-miss problems of loading cassette games into some home computers.

The best example of the multi-load facility is to be found on Dragonslumper — an adventure trilogy.

The last part of the game is called, The Enchanted Countryside. You are a traveller in this land. Your objective is to build up

sufficient power and magic to get into The Oppressed Village. In order to do this you will need to vanquish the ghouls, spiders, warlocks, snakes and serpents in the employ of the evil Dragon.

Gold is awarded for each successful encounter with one of your adversaries. When you have built up all your resources you can attempt to get over the bridge into the Oppressed Village.

If you are successful, the second part of Dragonslumper is then loaded and you find yourself in the Oppressed Village.

Dragonslumper is the best game in the current Supercharger range and looks like becoming a good seller as the penchant for adventure games gains momentum.

The main drawback with sinking your cash into adventure games is that once you've solved

STAR WARS SWORD MASTER

May the force be with you! You'll need it when you enter the Jedi Arena.

This latest release from Parker Video Games for the Atari VCS is based on the forthcoming addition to the Star Wars saga called Revenge of the Jedi.

You take the part of a Jedi knight battling the deadly Saeeki and an opponent of the Jedi. The Saeeki is a remote controlled ball-of-tricks which sends out beams of laser fire.

Usually this laser fire is controlled by the participants in this fight to the finish — the two Jedi knights, Ice to Ice across the arena, blasting away at each other in a bid to break down their opponents' force-field defence.

The knights guide the laser blasts from the Saeeki using their Lightsabres — the Saeeki's blasts go in the direction the sabre is pointing.

But the Saeeki tends to go

'wild' occasionally — zipping around the arena sending out lethal beams of energy that neither of the knights can control. Then it's every man for himself.

You can either take on a computer controlled enemy, or fight it out with a friend using the Atari's paddle-controller.

Jedi Arena — the latest in Parker's cartridges based on the Star Wars movies — will be available from March and will sell at around £29.95.

BACK FROM THE DEAD!

Dracula is alive and well and living in the Intellivision Video Games Console.

The long fanged phantom from Transylvania has been haunting the programming department of Imagic Games — and now he has bewitched them into preserving his gizzily memory for ever in silicon.

You can bring him to life by plugging in this latest cartridge for the Mattel Intellivision video games centre.

The idea of the game is to sink your fangs into as many hapless victims as possible. Points are awarded according to the number of pints of blood you can consume.

Just as in the old films, Dracula can take on the form of a bat as well as a human. This is a useful facility in this game as it enables you to move faster than your victims.

It is not all in Dracula's favour though, as there are still some good characters left in this godforsaken city. The constable armed with a wooden stake, the white wolf, and the vampire that can successfully attack Dracula when he appears as a bat.

Ice Trik challenges you to dodge a stampeding herd of caribou, cross an ice-filled river, and finally to melt the ice palace and set free the Aurora Borealis to light up the sky.

You play the part of Vali the Avenger and your arch enemy in Ice Trik is Kaltron the Terrible. You will also meet in the course of your adventure the Wildfire Queen who has her arrows at Vali if he is forced to kill a

canbou.

The third game in this trio of new releases from Imagic for the Mattel Intellivision games centre is Tropical Trouble — a jungle adventure.

The idyllic holiday island turns into a tropical nightmare when your darling Doris is kidnapped by the Beach Bruiser.

In order to get her back — and prove to her that you're not the clumsy Clarence his mother always said you were — run through the jungle to find her. Dodge the boulders, coconuts, falling lava, and hurled rocks as you go.

Dracula, Ice Trik, and Tropical Trouble are in the shops now at around the £25 mark.

LAUNCH DATES PUT BACK

Atari's new anpac system, the 5200, has had its launch date put back due to Atari setting up a new production plant in Ireland.

The bad news for would-be purchasers is that it is now un-



ATARI

them, there's not much incentive to play them again.

Dragonstomper's three games in one should be enough to keep even the most skilled adventurer occupied for a very long time.

The multi-load facility is incorporated in another of the highlights from the Supercharger range — Escape from the Mindmaster. Its rare to see anything new these days among the plethora of new video games hitting the shops. Mindmaster provides the best evidence that the designers' ideas haven't dried up.

The idea of the game is to outwit the mindmaster who has trapped you in a maze. A number of intelligence tests — such as fitting shapes into their right holes will be presented and you must get them right to proceed.

The maze itself is very impressive — drawn in 3D with a

convincing simulation of depth as you penetrate its corridors.

If you master the first maze the multi-load device will then load your second tougher test. There are four mazes altogether on the tape.

Two other reasonably good games are Killer Satellites — a scrolling shoot 'em up where you have to protect a city being bombarded by an assortment of alien bombs, ships and satellites.

The second game in the reasonable category is Fireball — a break out type game with five versions to choose from. A nice development of the basic idea is the replacement of a ball with a little character at the bottom of the screen who must first catch the ball and then throw it back at the wall, aiming at the brick he wishes to dislodge. If you fail to catch the ball a large hook on an elongated arm comes out from the left hand side of the screen and pulls your hand off.

In the not-so-hot category are Suicide Mission and the ridiculous Communist Mutants From Space.

Suicide Mission is a version of



Asteroids — and a none too impressive one at that. The colours were watery and the screen flickered constantly. The saucers moved far too slowly and there was no hyperspace button.

The scene-setting blurb for this game tries to align the plot to the film *Fantastic Voyage* — pretty silly as anyone who plays the game will know its supposed to be Asteroids.

Communist Mutants From

Space is a dull shoot 'em up. I cleared screen after screen on my first go.

C&VG verdict on the Supercharger — at £39.95 for the expanded plus Phaser Patrol a definite yes. Once you've got the thing itself Dragonstomper and Mindmaster will also look like very attractive buys at £19.95 each. Fuller reviews will be included in the Joystick Jury columns, at a later date.

likely to be in the shops until the winter.

Another delay is anticipated in the VCS keyboard add-on which turns your VCS into a home computer. Andrew Swanston — Atari's marketing and sales director, told C&VG that the firm would not be launching the keyboard until there was a good range of software available for it.

COSMIC CREEPS

Jawbreaker sounds a far too apt name for a Tivision cartridge but you shouldn't confuse its pictures of creatures with mammoth fangs.

The jaws in question belong to you.

Tivision is an established name in video games in America where they have launched several titles — the best known of which is the climbing game *Miner 2049* etc.

The first cartridges compatible with the British PAL electrical frequency are King Kong and Jawbreaker. No prizes for guess-

ing what King Kong is — but for newcomers to video games the main characters are an ape, a girl and a gallant little chap who tries to scale the skyscraper to rescue her.

Jawbreaker brings back the subject of food to the screen of your television with a nibbler which should appeal to every youngster.

This is your chance to run not in a sweet factory eating away to your heart's and belly's desire.

You control a pair of chomping teeth on a mission to clear the screen of sweets. A quick brush of the old fangs and your ready to lunge into another screen full.

Yet more video game nosh to be found in Fast Food but this time for the savoury rather than the sweet toothed. There are burgers, hot dogs and French fries just waiting to be chomped in this brand new Telesys game.

Telesys second new game has the wonderfully idiotic title — Cosmic Creeps.

The idea of the game is to rescue the Cosmic Kids from the doomed planet before the Cosmic Creeps can get their nasty

little alien paws on them.

The games are available in compatible PAL format from Electronic Leisure Products of Limerick, Ireland. They cost £22.00 plus VAT.

SEGA RANGE FOR ATARI

Leading Japanese arcade game designers Sega are launching a range of games for the Atari VCS.

Sega are best known to videogamers for the hit arcade games Zaxxon and Frogger.

Their first offerings for the VCS, which have been launched in the States, are Tac-Scan and Sub-Scan.

Tac-Scan may have been spotted by some of you in your local arcades but for the uninitiated it is an extremely tough 3D shoot 'em up.

The three dimensional effect is created by a never ending series of concentric hexagons. You control three Tac-Scan craft flying through space which are set upon by a deadly superfleet from Ahm.

Also on the way from Sega is Sub-Scan which is described as a battle of wits on the high seas.

No date has yet been set for a UK launch for the home video games though they are bound to come into the country sooner or later as Sega already have a very strong foothold in the country's arcades.

Sega are likely to provide hot competition for the leading video games manufacturers as the Sega designers have a reputation for producing hit games which is the envy of the industry. So arcade titles which are likely to make winning conversions to home systems may not be up to grabs by the large firm's licence hunters.

● The copyright case Atari had pending on Imagic's *Demon Attack* cartridge (see the April issue of C&VG) has been settled out of court. The result a stale mate.

And the court battle over the Colecovision VCS conversion module is settled too. With Coleco paying Atari royalties it should be in the UK by September.



Save £5 by legging it down

Put a move on, and you can save a full £5 by buying the incredible Centipede™ at one of our special offers (starting from August 1st.) So hurry, and be one of the first to play 1982's most popular arcade game at home. Centipede Systems™. What's more it's one of the games that will sort the men from the boys in the 1980s.



on to the shops now.

our very special pre-release price of only £24.99. (The price goes up to £29.99 on release. Centipede is only from Atari® and exclusively for Atari Video Computer System. Atari Player of the Year Competition.)



More fun and games.

COMPUTER & VIDEO GAMES 23



JOYSTICK JURY

DRATS DRIVE YOU CRAZY!

Crazy Chase must have got its name because it drove Phillips Videopac testers crazy.

You control a little blue disc called the Munchkin which you steer around a maze attempting to eat segments from a snake's tail.

You are pursued by a couple of Drats who can cause the Munchkin to shrink away to nothing if they catch it.

Points are awarded for each segment consumed but if you want to score really highly you will also have to eat the Drats. In order to do this you have to catch them during the brief few seconds they have changed colour after you have eaten a segment from the tail.

It that sounds easy then just you give it a try. As you play, the snake — or Oratopiller to use the correct zoological term, gets faster and faster. The effect of this is that you lose your speed advantage and have to rely on sharp cornering and planning to catch the odd segment.

There are four Pac-Man style escape tunnels which you can run through to get to the other side of the screen. But be careful as the Drats can follow too.

This game is so tough that high scores deserve a reward. So if you've scored over 500 on Crazy Chase send us a photo of the screen with the score and our friends at Phillips will send you one Videopac of your choice from the current range.

Only the first five entries to reach the Computer and Video Games office will win prizes.

Send your high score photos to our Herbal Hill address which you will find on page three of the

magazine. Please mark your envelope Crazy Chase Competition and state the game you would like to receive should you be a winner.



THE VERDICT

A tough, addictive game and definitely on the 'must get' list for G7000 owners. Proof that Phillips can make 'em just as good as anyone else.

Action: ★★★★★
Graphics: ★★★★★
Addiction: ★★★★★
Theme: ★★★★★

COOKING UP A NIGHTMARE

The chef's nightmare comes true in Burger Time as his ingredients grow to life size and set off to eat him.

The Intellivision action takes place in a series of seven moxy kitchen designs that will never find their way into the Ideal Home Exhibition.

As a fried egg, several tomatoes and — later on — a pickle, leap out of the frying pan and start looking hungry, you have to guide the chef around a maze of platforms and ladders trying to make burgers. The ingredients react to your every move occasionally despatching one of their number to head you off but usually following close on your heels.

More docile ingredients, like burgers, buns, lettuce and tomato slices lie ready for cooking

on platforms. As you run over them they drop down a level, pushing the next ingredient down below them and gradually settling to form a completed burger at the bottom of the screen. Complete all your bangers and you're onto the next screen.

If the more active ingredients got too close you can turn and "pepper" them with a shako from your pepper jar, putting them out of the action for a while. You can also squash them under dropped buns for 100 points each or, for even more points, tempt them onto a bun behind you and then drop it by stepping off. An additional bonus is that the bun will then drop two levels.

French fries, coffee, ketchup and ice cream appear on the screen occasionally and can be gobbled for points and extra pinches of valuable pepper.

Burger Time is still a popular arcade game and this Mattel cartridge captures much of the flavour of the original. It's harder than it looks.

The key to good arcade games is that while beginners can survive long enough to learn the game, experts have early opportunities to show their paces and boost their score. Burger Time is a marvellous example.



THE VERDICT

The balance is just right and the theme makes it a real winner. A challenge from the word go.

Action: ★★★★★
Graphics: ★★★★★
Addiction: ★★★★★
Theme: ★★★★★

GREAT BALLS OF FIRE!

Things are heating up on the games front with a fire-breathing dragon to contend with in Imagic's latest release.

You play the part of the brave prince who is attempting to get into his father's castle to rid it of the evil dragons.

In order to get into the castle you must first dash across the bridge and into the treasure

MACHINE	MANUFACTURER
1 Phoenix	Atari
2 PacMan	Atari
3 Frogger	Perker Brothers
4 Invaders	Atari
5 Pitfall	Activision

All the above cartridges are available at games centres.

room.

The price can be made to crunch by pulling back on the joystick. Depressing the fire button makes him jump. For best results run into the jump with precise timing to clear the fire balls and gain extra ground. Once safely into the treasure room, you have to clear the screen of diamonds, crowns, goblets, jugs, heaps, helmets, lemons, and candleabra to score points.

When you have collected all the treasure you can make for the escape exit at the top left-hand corner of the screen.

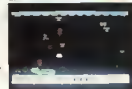
But don't expect to take a leisurely stroll around the treasure room. There's a fire-breathing dragon in there as well, who is programmed to track you and fry you with fireballs.

There are seven dragons to get past in order to master the game and every time you clear one treasure room you come up against a tougher quicker dragon in the next.

Dragonfire scores highest on graphics. Those dragons look pretty mean and their fire-breathing movement is impressive.

We tested the game on the Atari VCS but the game is also available in Mattel Intellivision format.

The game is in the shops now at £24.95 plus VAT for the Atari version and £27.34 plus VAT for the Mattel.



THE VERDICT

A tough, addictive game at the first sitting. A slight question mark over the game's lasting appeal. Once you've beaten that seventh dragon what then?

Action: ★★★★★
Graphics: ★★★★★
Addiction: ★★★★★
Theme: ★★★★★

MACHINE	MANUFACTURER
6 Donkey Kong	Coleco
7 Defender	Atari
8 Rvor Raid	Activision
9 Demon Attack	Imagic
10 Berzerk	Atari

produced for the Atari VCS home video

LOOK MUM, NO WIRES!

The trouble with playing video games on the conventional family TV set is that the console has to sit on the floor beneath the set in the corner of the room.

To play you either have to sit on the floor in front of the screen, pull your chair up in front of it, or make the wires stretch right across the room to the acle.

One attempt to get around this problem is Wico's extension cable which simply adds length to your joystick wire. Although this enables armchair play, it increases the Spaghetti Junction of wires.

Now there is a real solution to the problem in the shape of the world's first remote control joystick.

The Cynex is the brainchild of Sandy Goldman who is also president of the American-based firm.

The heart of the new joystick is the world's first radio chip which enables objects to be moved on screen at up to several yards distance.

The stick has been on sale in the US for several months now.

The large video games manufacturers have also been quick to spot the potential of the remote control stick and Atari have now signed a deal to get first buying option on any of Cynex's new products.

Now that the radio chip has been developed it will be a relatively short step to include the controls inside the games system itself and this is now the key project for Cynex.

The remote control joystick is imported into the UK by Dynavest of London and will be in the shops in June at around the £50 mark. For this you get two remote control joysticks plus the control box which connects to the Atari VCS. The system is also compatible with the Vic 20.

Don't miss next month's C&VG for your chance to win a Cynex.

BIGGER BURGER PRIZE!

There are five BurgerTime cartridges awaiting the most imaginative labellisation owners out there.

BurgerTime brings a whole new meaning to the term "fast food".

Artist Phil Littler has come up with his interpretation of a super burger which would dwarf any of the varieties to be found in high street outlets.

We want you to come up with a name for this breakfast and brightest of burgers and write in to tell us what it should be called.

Please send your best suggestion into the Biggest Burger Competition, Computer & Video Games, Durrant House, Herbat Hill, London, EC1R.

The entry must be with us by July 16th and the five BurgerTime cartridges go to the five names which best describe this mighty burger. Computer terms may or may not influence the judges' decision — but it's final anyway.



WHERE NO GAMESTER HAS GONE BEFORE

You can enjoy travelling the space sectors of Phaser Patrol for yourself and start up your own Supercharger collection by entering our Atari quiz below.

The UK importers of the Supercharger, Electronic Leisure Products of Limerick, Ireland have put up three Superchargers with Phaser Patrol and two other cassettes of your own choice to be won in our competition.

All you have to do is tick the correct answers to the following

questions about the Atari VCS and some of its games.

Send your answers to Supercharger Competition, 8 Meadow Vale Close, Raneen, Limerick, Ireland. Please be sure and include your name and address and a telephone number so we can let you know if you've won.

Also state the name of the two other Supercharger cassettes you would like to receive.

No employees of EMAP or Electronics Leisure Products or

their relatives is permitted to enter the competition. And the usual Computer & Video Games competition rules apply.

The entries must be in by July 12th.

Simply fill in the coupon below, cut it out and send it off to the address above. Best of luck and if more than three of you answer all the questions correctly your ideas on the Supercharger games question will decide the prize-winners.

SUPERCHARGED QUESTIONS

1) Pacman takes its name from:

- a) A famous 19th Century ghost story ☐
- b) The Japanese word Paku meaning: foal ☐
- c) The Japanese ball beating game Pachinko ☐

2) Demon Attack has the following number of attack waves featuring different aliens:

- a) 26 ☐
- b) 54 ☐
- c) 230 ☐

3) Pitfall was designed by:

- a) David Crane ☐
- b) Ernest Graystones ☐
- c) Henry Stanley ☐

4) What stalks the riverbank in Frogger:

- a) A snake ☐
- b) A lady frog ☐
- c) An otter ☐

5) Atari's world HQ is based in:

- a) Slough ☐
- b) California ☐
- c) Tokyo ☐

What sort of game would you like to see on the VCS in cassette form (not more than 24 words please):

My name is:

Address:

Tel:

If I win the two other cassettes I would like to see are:

- Dragon Slomper ☐ Froball ☐ Escape from the Mind Master ☐ Communist Mutants from Space ☐ Killin' Satellites ☐ Suicide Mission ☐

THE RUSSIAN GRANDMASTER

The most celebrated participant in the computer chess field is undoubtedly the Russian grandmaster Mikhail Botvinnik.

Botvinnik was world champion from 1948 to 1963 with two one-year breaks, when he lost the championship first to Smyslov and then to Tal, only to win back the title in a return match a year later each time.

Botvinnik was born in 1911 in the Ukraine and until his retirement a few years ago was a noted electrical engineer as well as a chess grandmaster. He attained the status of Soviet master as long ago as 1927 and first won the championship of the Soviet Union in 1931. He became well-known in the West with his joint first place at the Nottingham tournament in 1936.

Botvinnik's career provides a bridge between the almost mythical days of Capablanca and Alekhine, 50 years ago and the computerized chess of today.

THE PIONEER

Since his retirement from active play 10 years ago, Botvinnik has concentrated increasingly on the latter, preparing his program which is known as Pioneer. However, his interest goes back much further to a time when he was still a leading active player. As far back as 1968, Botvinnik gave a lecture in the Russian town of Vladimir in which he described a chess master in terms which have a strong computing flavour.

"A master in his play has two functions. First of all he functions as a calculating and solving mechanism because he has to consider the possible moves and analyse variations. A second function is also very important — one's ability to program oneself, to perfect one's individual program... to modify it in a constant research for improvement and perfection. One can consider a player who gives due attention to this aspect as guiding himself by a definite program or algorithm."

Botvinnik saw the development of an "artificial intellect" — an electronic machine capable of playing chess — as a major problem. If it could be achieved, he said "I foresee an unprecedented period of popularity for the game. When an electronic machine has started playing chess and played it successfully this will be such a momentous event that every schoolboy will want to

know about it. In world history, it will perhaps fall not far short in importance of the discovery of fire."

Botvinnik's book, *Computers, Chess and Long-range Planning*, also appeared in 1968. It is a very complex mathematical representation of chess introducing a number of ideas such as a "generalised exchange" between different kinds of advantage (such as material and space), the attacking path of a piece, the intangible value of an attack, and the position estimate of a chess position (which indicates when a positional sacrifice may be advantageous).

Although the original Russian title of this work meant literally "An Algorithm for Chess", the text is far more of a blueprint for a lifetime's study than an algorithm.

CAPTURED SKILL

In April two years ago Botvinnik came to London to speak at the Advances in Computer Chess conference at Imperial College. (The next conference is scheduled for April 1984). In his lecture, Botvinnik stressed the need for a program to examine only a small number of positions at each turn (preferably only one) and to restrict the analysis for each move to approximately 30-60 well chosen positions in all, if master play were ever to be achieved. Thus the emphasis should be on selecting the positions to examine and evaluating them properly — exactly the opposite approach to BELLE. Many experts believe that if Botvinnik's method of representing the master's positional and evaluative skill could be captured in a program, this would be a major step forward for computer chess.

Sadly, after many years of development, Botvinnik's Pioneer has still not appeared except in experimental form, and it must be doubtful now that it ever will. Perhaps grandmaster chess is too complex a problem for the current state of the chess programmers' art — certainly much more tangible success has been achieved by programs like BELLE which search huge trees of variations

but understand almost nothing about them.

As an example of what Pioneer can



achieve with a complex position, Figure 1 shows a famous position which Botvinnik (white) reached against Capablanca at the Rotterdam tournament of 1938.

White to move can now choose between two strong-looking options 1.N-R5ch and 1.B-R3. Botvinnik's analysis at the time looked at 28 positions in total, with an average branching factor (number of moves considered in each position) of 1.13. Pioneer's analysis of the position looks at 40 positions with a branching factor of 1.05 and find the variation:

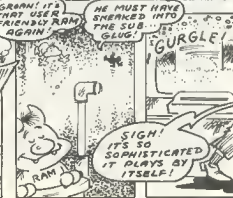
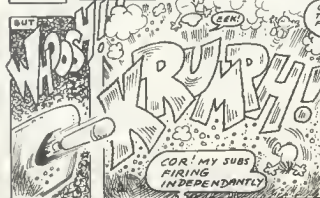
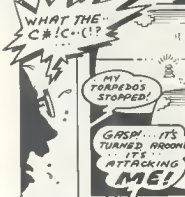
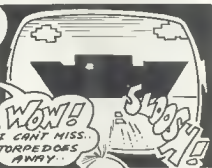
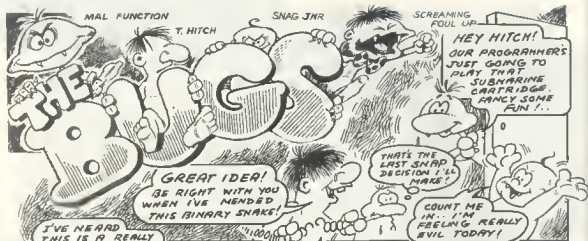
1. B-R3, Qx6. (H 1... Q-K1; 2. Q-B7ch as strong)
2. N-R5ch, PxN, 3. Q-N5ch, K-R1, 4. QxNch, K-N1;
5. P-K7, Q-B8ch; 6. K-B2, Q-Q7ch, 7. K-N3, Q-K6ch, 8. K-R4, and now

White wins in all variations, e.g. 8... Q-K8ch; 9. KxP, Q-K7ch; 10. K-R4, Q-K8ch; 11. K-R3, Q-K6ch, 12. P-N3.

It is easy to believe that BELLE would also have found this variation, but it might have needed to examine tens of thousands of positions to do so! If you want to know more about Botvinnik's method, his 1981 conference paper is published in *Advances in Computer Chess 3*, edited by M R B Clarke (Pergamon Press, 1982) — but beware, it is far from easy reading!



BY MAX BRAMER



Announcing more exciting programs for the BBC.

Acornsoft is the software division of Acorn Computers, the company that designed and built the BBC Microcomputer. Here are four more exciting programs, all designed to get the most from your BBC Micro.

Starship Command (£9.95) is a demanding high-resolution graphics game in which you command a starship against attacking alien ships. You control the forward drive and rotational thrust of your ship, which is equipped with shields, long and short-range scanners and a sector display of the stars and alien ships.

Countdown to Doom (£9.95) is a race against time as you strive to repair your damaged space ship in the corrosive atmosphere on the planet Doomawangara (Doom). Beat the clock or resign yourself to a life in the wilderness of Doom.

Business Games (£9.95) is a cassette containing two games designed for economics, business or general studies teaching.

In **Stokmark**, up to eight players compete in buying and selling shares aided by a screen display of relevant market information.

In **Telemark**, players compete to dominate in the manufacture and sale of televisions. The winner is the one who makes the largest profit or controls over half the total market.

Jars (£11.90) is an educational cassette suitable for 7-13 year olds. The objective of the program is to present what are usually thought of as purely numerical problems, in a visual way. Jars of liquid are used to visualise volume estimation and fraction problems. Success, partial success or failure is noted by a scoring system and suitable comments.

ACORN SOFTWARE

Starship Command

for the BBC Microcomputer Model B



ACORN SOFTWARE

Countdown to Doom

for the BBC Microcomputer Model B



ACORN SOFTWARE EDUCATION

Business Games

for the BBC Microcomputer Model B



ACORN SOFTWARE EDUCATION

Jars

for the BBC Microcomputer Model B



How to get Acornsoft programs.

If you're a credit card holder and would like to buy cassettes of the programs shown in this advertisement, or if you would like to know the address of your nearest stockist, just phone 01-200 0200.

Alternatively, you can buy the cassettes directly by sending off the order form below to: Acornsoft, c/o Vector Marketing, Denington Estate, Wellingborough, Northants NN8 2RL.

Also use this form if you would like to receive the current free Acornsoft catalogue.

Please allow 28 days for delivery.

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Starship Command	£9.95			£80.22
Countdown to Doom	£9.95			£80.49
Business Games	£9.95			£80.00
Jars	£11.90			£80.75

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ACORN SOFTWARE

CHECKOUT U.S. STARS

ARCADE HEROES

No ups or UK record breakers this month but they'll be back next issue with Donkey Kong Junior and Mi Go planned for coverage in the next future.

Instead we're breaking away to please readers like Mark Lawrence from Dundee and Trevor Ballsted from Withem, who both wrote wondering how our charts compare with the greatest video games playing nation around — America.

So we're printing the charts as taken from a U.S. magazine Video Games so you can compare them with the top scores in your own arcade. Don't be surprised by the size of some of them, record-breaking tests are encouraged in the U.S. and arcade owners are often persuaded to stay open so that a local champ can make his bid for national fame on a favourite machine.

I don't like to ask about the problems involving going to the lavatory but can only assume that the Missile Command and Robotron scores mentioned below must have cast-iron blad-

ders or very understanding arcade owners.

Another way around the bladder problem is to beat the game on a solo basis, as did hvs lads at Slavenage Bowling Centre Simon Revill, Gary Murphy, Paul Carter, Alan Stagg and Mark Taylor recently battled their way

to 4,330,640 on Missile Command before the machine was turned off.

Not quite in the U.S. class but we'd like to hear of any similar attempts. Please write to Arcade Action, Computer & Video Games, Durrant House, 8 Herbel Hill, London EC1R 5JB.

JUNGLE REVENGE IN 3D

TIP TOP

Donkey Kong in three dimensions is the fascinating idea behind Tip Top.

The game features a mischievous gorilla with a nasty line in practical jokes and a determined exploit out for revenge.

The exploit begins Tip Top ascoop in his lair when the gorilla creeps up and sets fire to his foe. Enraged, our stubborn hero, pursues the creature through four screens of jungle terrain, over lakes and rivers, up hills and over bridges.

Screen one sees the gorilla stomping about on top of a cliff, while at the bottom the exploit begins his climb up to enact his revenge. Like Donkey Kong's Mario, he has the power to jump or climb but his climbs are far slower, scrambling over the next parapet.

Small monkeys frolic around the screen — seemingly harmless — and the gorilla gently rolls coconuts down the slope in time-honoured fashion.

Across a bridge above a waterfall, down a slippery slope and jumping over a ravine, the hunter is now close to his rival. But watch those monkeys.

If four or more grab hold of the exploit they lift him up and hoist him over the nearest cliff. If, instead, he finds the gorilla's hideout onto the next screen.

This features snakes and narrow strips of land by a lake. While screen three takes place in a blue plain filled with small holes and rampaging rhinos. The holes are haunted by a cuddly but none-the-less deadly critter who may grab you as you dive in to escape the rhino charges.

The final screen offers up a large river full of logs, crocs and hippos. A vastly superior Froggie with the hippos also travelling across the river as well as up and down it.

On this screen the gorilla finally gets his come-uppance as a handy fire brand is set beneath him.



AMERICAN HEROES

Jeost (level 5, 20,000 bonus, new chip)

1,553,800 Joe Malasarte
Dittums, Ia.

Kangaroo

754,400 Sam Middleton
Panama City, Fla.

Millipede

785,027 Eric Ginner
Mountain View, Calif.

Missile Command

64,696,720 Jeff Sluieve
Dayton, Oh.

Moon Patrol

577,480 Eric Ginner
Mountain View, Calif.

Ms. Pac-Man

286,410 Mike Lpkosky
Houston, Tex.

Pengo (4 men)

369,450 Mark Robichak
Outhen, South Africa

Q*bert

3,807,035 Richard Wilson
Woodbridge, Va.

Rally X

230,910 Joel West
Shelby, N.C.

Robotron

202,457,650 Mike Zack
West Bloomfield, Mich.

Stargate

70,283,000 Oscar Iglesias
Concord, Calif.

Super Cobra

198,470 Matt Brasa
Helsna, Monf.

Tampest

4,706,540 David Plumer
Regina, Sask., Can.

Ton

4,038,171 Rick Maldonado
Westfield, Mich.

Zaxxon

2,138,650 Eric Birch
N. Palm Beach, Fla.

- 8erzer
- 119,340 Joel West
Kirkville, Mo.
- Centipede
- 15,207,353 Darren Olson
Calgary, Alberta, Can.
- Dig-Dug
- 3,482,260 Brian Doyle
Sanles, Calif.
- Donkey Kong Jr.
- 949,200 Matthew Brass
Dittums, Ia.
- Frenzy
- 4,737,620 Rik Kelly
Kamosha, Wac.
- Galaga (level D)
- 12,753,570 Mike Lynn
Dutham, N. C.
- Ort (six men)
- 704,590 John Chandai
Hobbs, N. M.
- Gravitar
- 4,722,200 Raymond Mueller
Boulder, Col.

PINBALL

Our appeal for top pinball scores brought a prompt reply from Keith Hutton of Liverpool. He sent us a detailed rundown of his top scores on all the electronic machines manufactured since 1975/77. They are all there — Bally, Williams, Gottlieb, Stern and Zaccaria — an amazing list of over 40 machines played at various locations around the country.

There are too many top scores to list here, but Keith reckons his best scores include 7,241,510 on Bally's Fathom, 5,352,050 on Madusa, also from Bally. Keith racked up 7,421,770 on Gottlieb's Spirit, 2,536,200 on Stern's Serengeti, 7,104,690 on a Williams Jungle Lord and 20,421,210 on Zaccaria's Pinball Champ 82 at Liverpool arcades.

Keep the top scores coming in please.

Meanwhile on the new pinballs front Bally are bringing out a baseball theme game called Grand Slam. This can be played by a combination of two or four players — but other information from the pinball giant about this new release is thin on the ground.

On the American scene Zac-

caria have introduced Pinball Champ, a game which follows the trend for personal hi-fi by including a headphone plug which allows players to listen to comments from the machine! Pinball Champ has an elevated main ball runway which allows an enlarged playfield within a standard size cabinet.

The machine also includes a spinning target alley where high-speed shots collect high score values.

Remember keep those high scores coming in!

BEHIND ENEMY LINES

FRONT LINE

Behind enemy lines and armed only with a gun and a few grenades, your mission is to force the opposing generals to surrender from their fort HQ.

You are, of course, single-handed and will have to take on whole platoons of enemy snipers and several crack panzer divisions. It's enough to make John Wayne think twice!

You start off on foot firing at the enemy. You can hide behind bushes as you battle your way up the screen.

The opposition are also armed with guns and grenades, they make good use of bushes for cover and they greatly outnumber you.

Landmines are deadly and have to be avoided in your rush up to the panzer ranks.

Now your gun is useless and you have to lob grenades at the tanks and avoid their fire.



To put yourself on equal terms you can make use of the odd blue tank which the opposition generals have carelessly left lying around the battlefield. Tanks come in two varieties: small and speedy or large and well armoured.

The larger tanks also offer greater artillery fire but you have to beware of grenades thrown from fox-holes or the other tanks. Two hits will disable your tank but you can jump clear before the final explosion and look for your next tank.

When the fort is in sight, you know your mission is nearly over. Leaving the tank you can storm the enemy HQ and try to lob a grenade over the walls and into the general's conference centre.

If this is achieved, a wounded general appears on the battlemaps waving a white flag to acknowledge your victory.

Front Line has been out for a while already but has met with a

cool reception from arcade players because it is initially difficult to get past the snipers.

This is a pity because the action really takes off when you climb into your tank, worth persevering with if you do get the chance.

AWAKEN RUDELY!

BUCK ROGERS

Buck Rogers, frozen in space for half a millennium, wakes up to find himself ranged against the forces from the Planet of Zoom.

You can chronicle his adventures as he tries to battle through to take on the enemy source ship in the first of a possible series of video games: Buck Rogers and Planet of Zoom.

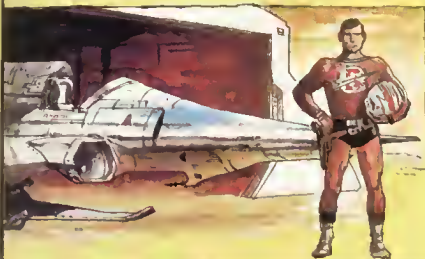
It's space warfare as seen from behind the twin jets of Buck's ship with you at the controls.

The battle begins in a heavily armed channel of an artificial planet, reminiscent of the Death Star in the Star Wars saga. Enemy ships hurtle towards you and the Buck Rogers in you, rises to the challenge as your ship twists away from Zoom's alien ships, firing and dodging.

A two-level speed control, a pilot's joystick and a fire button are at your fingertips as the scenes change to deep space, the formidable smasher tunnels and the spires of Cosmic City.

The enemy ships come in all shapes and sizes.

Anyone who has enjoyed the TV series will be interested to see just how it converts to the video screen!



DONKEY KONG JNR.



Surprising how heroes suddenly become villains in the arcade world. Take Mario for example. There he was in Donkey Kong playing the gallant knight in a boiler suit racing to save the fair maiden from the clutches of our favourite giant gorilla.

But here in the sequel to that memorable battle of wits Mario has become the villain. He has caged poor old Kong and refuses to let him go. So little Kong Junior sets out to rescue his dad.

Donkey Kong Junior has to climb vines to reach the cage and rescue his illustrious father. But there are nasty jungle creatures called Snappers which dash around attempting to knock little Kong off. Kong can jump over the Snappers as long as he is facing them. Then there is the nasty bird which will also attempt to prevent Kong completing his mission. On the second, third and fourth levels fruits appear. Kong can snap up these and send them plummeting to the jungle floor — If they hit a bird or a Snapper then 100 points will be added to your score.

The number of Snappers increases each time Donkey Kong Junior manages to rescue his dad. To climb a vine you must position Kong Junior right beneath it, and move it. You cannot leap onto a vine.

Control keys are: "5"=left, "8"=right, "6"=down, "7"=up, "Y" or "N"=jump

HS=high score

S=score

C—if 1, fruit hit bird or snapper

BIRD 1, BIRD 2 — bird positions

LIVES—lives left

H—direction of man

COUNT—Screen number

X\$—shape under bird

CHECK—if 8, man falls off vine

A,B—Snapper positions

AS—Snapper shape

D—direction of Snapper

```

50 DATA 0,0,0,96,1240,240,96,24
20 240,244,244,242,152,12,0,14,1,
24,0,1,1,1,3
240 DATA 255,254,252,252,24
0 240,248,258,127,59,53,53,31,31
31
70 DATA 0,1,3,4,12,240,166,268
0 128,192,32,48,3,165,266
00 DATA 5,7,7,165,65,39,0,
120 128,8,192,264,376,144,59,23,
96,4,24,58,0,144,160,192,98,
96,96,112,0
90 DATA 2,2,1,1,2,4,2,2,53,207
15,15,24,48,98,192,253,243,240,
240,24,12,6
100 DATA 1,2,2,4,1,3,6,7,128,64
64,32,128,192,56,224,0,16,48,12
6,128,46,0
110 DATA 0,226,118,54,248,0,0
100 GO SUB 100
1000 INK 0: PAPER 7: BORDER 0: C
LS
1010 LOAD ""

```

```

1 LET HS=0
2 LET C=0. LET X$="" : LET 01
RD2=3: LET S=0: LET LIVES=3: LET
H=1: POKE 23650,0: LET SNAPPERS
=1: LET COUNT=1
1000 CLS
1010 PRINT AT 3,0: INK 2:"KL": P
PRINT AT 4,0: INK 3:"MN": INK 0:
FOR U=0 TO 15 STEP 4: PLOT U,136
DRAW 0,15: NEXT U: DRAW -10,0
1015 INK 0
1020 PRINT AT 0,0:"
" INK 4:"0": INK 0:"
" INK 4:"0": INK 0:"
" INK 4:"0": INK 0:"
3 " INK 0:"
1030 PRINT INK 0:"
": INK 4:"0": INK 0:"

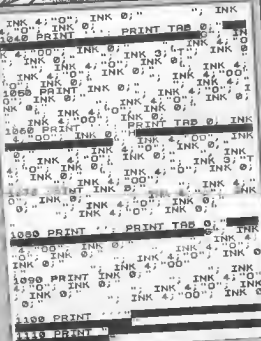
```



```

1 REM DONKEY KONG J.A.
2 FOR a=144 TO 164
300 FOR x=0 TO 7
400 READ b: POKE USA CHAS a+x,b
NEXT x: NEXT a
40 DATA 0,0,0,6,16,16,6,16,31,
47,47,111,26,48,56,112,128,64,32
0,0,128,128,192

```

```

2000 LET CHECK=0: LET X=10: LET
X=0: DIM A(5): DIM B(5): DIM AS(
5): DIM D(5): IF SNAPPERS>5 THEN
LET SNAPPERS=5
2010 FOR U=0 TO 5: LET A(U)=(5+U
)-1:
2020 IF U/2=INT(U/2) THEN LET A
1(U)=
2030 IF U/2<>INT(U/2) THEN LET
2A5(U)=
2040 IF U/2<>INT(U/2) THEN LET
2A5(U)="I": LET D(U)=2
2110 NEXT U
2120 LET AS=14: LET B(B)=5: FO
R U=1 TO 5:
2130 LET IVES=INVERSE 1: PRINT
R U,
20, U*2, "A", AT 21, U*2, "B": N
EXT U
2230 PRINT AT 20, 20, "SCORE": 3: A
T 21, 19, "H-Score": HS: INVERSE
0: PRINT AT X,Y, "A", AT X+1,Y, "B"
NEXT
2250 FOR U=1 TO SNAPPERS: PRINT
NEXT

```

```

0250 FOR U=1 TO SNAPPERS: NEXT
    AT (U),B(U); INK 1,A$(U);
0300 IF INKEY$="8" THEN GO SUB 4
0300 LET H=1
0300 IF INKEY$="5" THEN GO SUB 4
0400: LET H=0
0400 IF INKEY$="7" THEN GO SUB 4
0300 IF INKEY$="6" THEN GO SUB 4
0500
0500 IF INKEY$="H" OR INKEY$="U"
    IF THEN GO TO 100
0600 IF ATTA (X,Y-1)=50 THEN GO
    TO 0000
0900 FOR U=1 TO SNAPPERS: PRINT
    AT (U),B(U); 4 THEN LET A(U)=A(
    D(U); LET D(U)=2: LET A(U)=1
    U)+5: IF B(U)≥29 THEN LET A(U)=
    U)+5: LET D(U)=2: THEN LET A(U)=4
    1110 IF A(U)≥19 THEN LET A(U)=4
    1120 PRINT AT (U),B(U); INK 1,A
    1200 IF ATTA (X,Y)≥104 THEN IF
    ATTA (X+1,Y)=57 OR ATTA (X+1,Y+1
    )=57 THEN GO TO 7000
    1140 BEGON 05,40: NEXT U
    1160 ATTA (X,Y)=104 THEN LET CHE
    CK=CHECK+1
    1165 IF ATTA (X,Y)≥104 THEN LET
    CHECK=0
    1170 IF CHECK=0 THEN GO SUB 4100
    1200 LET CHECK=0
    1200 IF CHECK=0 AND BIAD2=3 THEN
    GO TO 3000
    1190 IF D2=3 THEN LET BIAD1=
    (INT (RND*4))
    1200 PRINT AT BIAD1,BIAD2: " "
    F X$="0" THEN PRINT AT BIAD1,BI
    D2: INK 4: BIAD2=BIAD2+1: LET X$=
    1220 IF ATTA (BIAD1,BIAD2)=60 THEN
    N LET X$="0"
    1225 IF ATTA (BIAD1,BIAD2)=104
    THEN GO TO 7000
    1230 PRINT AT BIAD1,BIAD2: INK
    1230 IF BIAD2≥100 THEN GO TO 3
    00

```



BY ROBERT TURNER

RUNS ON A SPECTRUM IN 16K



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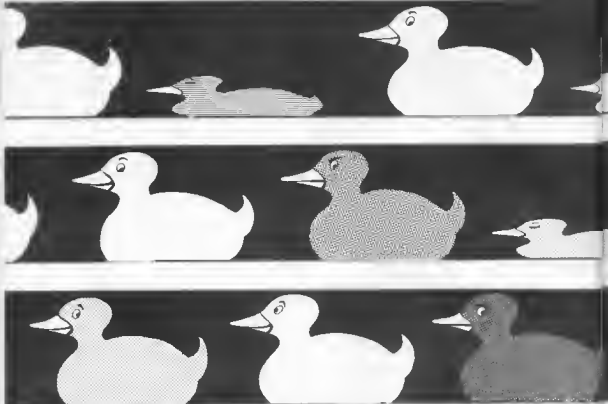
3250 PRINT RT BIRD1,BIRD2;" " : I
F X$="O" THEN PRINT AT BIRD1,BIA
D2 INK 4;"O"
3260 LET BIRD2=3: LET X$=" " : GO
TO 3000
4000 IF ATTR (X,Y)=184 AND Y<30
AND RTTR (X,Y+1)=56 OR ATTR (X
,Y)=154 AND RTTR (X-1,Y)=50 THEN
PRINT RT X,Y: INK 4;"O": AT X+1,Y
:"O": LET Y=Y+1: LET X=X+2: PRIN
T AT X,Y,"R": AT X+1,Y "BC": RETU
R
4010 IF ATTR (X,Y-1)=50 AND Y<3
0 AND ATTR (X,Y)=184 THEN PRINT
AT X,Y," " : AT X+1,Y "FE": LET Y=Y
+1: LET X=X+2: PRINT AT X,Y,"R")
AT X+1,Y "50": RETURN
4020 IF X,Y<30 THEN LET Y=Y+1: IF
ATTR (X,Y)<184 THEN IF RTTR (X
+1,Y)=57 OR ATTR (X+1,Y+1)=57 TH
EN LET CHECK=10
4025 PRINT AT X,Y-1," " A": AT X+1,Y
:"BC": IF CHECK=10 THEN GO TO 7
0 7000
4030 RETURN
4040 IF ATTR (X,Y)=184 AND Y<1
AND ATTR (X,Y-1)=56 THEN PRINT A
T X,Y:" " : RT X+1,Y:" " : LET Y=Y-
1: LET X=X+2: PRINT AT X,Y," " D":
AT X+1,Y "FE": RETURN
4050 IF Y<1 THEN LET Y=Y-1: IF
ATTR (X,Y)<184 THEN IF ATTR (X+
1,Y)=57 OR ATTR (X+1,Y+1)=57 THE
N LET CHECK=10
4055 PRINT AT X,Y:" " D": AT X+1,Y
:"FE": IF CHECK=10 THEN GO TO 7
000
4070 RETURN
4080 IF ATTR (X-1,Y)=50 AND RTTR
(X,Y)=56 THEN PRINT AT X,Y," "
: AT X+1,Y "OVER 1": LET X=X-2: PRINT
AT X+1,Y "O": OVER 1: FLASH 1:"D": RT
X+1,Y "O": RETURN
4090 IF ATTR (X-1,Y-1)=50 AND RT
TR (X,Y-1)=56 THEN PRINT AT X,Y:
" " : AT X+1,Y "FE": LET X=X-2: P
RINT AT X,Y,"FE": FLASH 1: OVER 1:"R"
: AT X+1,Y "P": RETURN
4100 IF ATTR (X-1,Y+1)=50 AND RT
TR (X,Y+1)=184 THEN PRINT AT X,Y
: INK 4;"O": AT X+1,Y "O" LET X=X
-3: PRINT AT X,Y,"R": AT X+1,Y "BC"
:"FE": RETURN
4110 IF ATTR (X-1,Y)=50 AND RTTR
(X,Y)=184 THEN PRINT AT X,Y: IN
K 4;"O": AT X+1,Y "O": LET X=X-3:
PRINT AT X,Y,"R": RT X+1,Y "BC"
4130 RETURN
4130 IF ATTR (X,Y)=184 AND ATTR
(X,Y-1)=50 AND RTTR (X-1,Y)=50
THEN PRINT AT X,Y:" " : RT X+1,Y "O"
: LET X=X+2: PRINT AT X,Y,"O"
: AT X+1,Y "FE": RETURN
4140 IF ATTR (X,Y)=184 AND ATTR
(X,Y-1)=50 OR ATTR (X,Y)=184 THE
N PRINT AT X,Y: INK 4;"D": RT X+1
,Y "O": LET X=X+2: PRINT AT X,Y:
"R": AT X+1,Y "BC": RETURN
4150 IF ATTR (X,Y)=56 AND RTTR (
X+2,Y)=50 THEN PRINT AT X,Y:" "
: RT X+1,Y:" " : LET X=X+3: PRINT
AT X,Y: FLASH 1: OVER 1:"D": AT
X+1,Y "O": RETURN
4170 RETURN
4180 IF ATTR (X,Y)=184 OR Y=30 O
R Y=1 THEN GO TO 3000
4191 LET B$=" " : IF RTTR (X-2,Y
)=50 THEN LET B$="O"
4195 IF ATTR (X-2,Y+1)=50 THEN L
ET B$="O"
4195 IF ATTR (X-1,Y+1)=57 OR ATTR
(X-1,Y)=57 THEN PRINT AT X,Y:" "
: RT X+1,Y:" " : LET X=X-2: PR
INT AT X,Y,"A": AT X+1,Y "B5": GO

```

```

TO 7000
4190 IF RTTR (X-2,Y+1)=59 THEN L
ET N=X-2: LET H=X+1: LET C=1
4191 IF RTTR (X-2,Y)=59 THEN LET
N=X-2: LET H=Y: LET C=1
4195 PRINT AT X,Y:" " : AT X+1,Y
:" " : LET X=X-2: IF H=1 THEN PR
INT AT X,Y,"R": AT X+1,Y "B5 X,Y")
4200 IF H=0 THEN PRINT AT X,Y:" "
D:"RT X,Y: RE"
4210 IF C=1 THEN GO SUB 6000
4230 FOR U=1 TO 5: SNAPPERS: PRINT
AT R(U),B(U): LET B(U)=S(U)+
D(U): IF B(U)<29 THEN LET R(U)=R
(U)+5: LET D(U)=-2: LET R$(U)="J
" : LET U(U)=30
4240 IF B(U)=4 THEN LET A(U)=R(U
)+5: LET D(U)=2: LET R$(U)="J:
4245 IF R(U)>20 THEN LET S(U)=4
: LET D(U)=2: LET A(U)=4
4250 PRINT AT R(U),B(U): INK 1:R
$(U): NEXT U: IF B$="O" THEN PR
INT AT X,Y: INK 4;"O": INK 0:" "
: AT X+1,Y: INK 4;"O": INK 0:" "
: GO TO 4310
4255 IF INK 4;"O": AT X+1,Y: INK 0
:" " : INK 4;"O": GO TO 4310
4300 PRINT AT X,Y:B$,AT X+1,Y:B$
4310 LET Y=Y+(H=1) - (H=0) : BEEP
05:10: LET X=X+2: IF H=1 THEN PR
INT AT X,Y:"R": AT X+1,Y "BC"
4320 IF H=0 THEN PRINT AT X,Y,"
D": AT X+1,Y "FE"
4330 LET C=0: FOR U=1 TO 5: SNAPP
S: PRINT AT R(U),B(U): INK 1:R$(
U): NEXT U: GO TO 3140
5000 PRINT AT 3,0: INK 1: FLASH
1:"KL": AT 4,0: MN: BEEP 05,0
: BEEP 05,20: PRINT AT 0,0: INK 4
: PAPER 0: WELL DONE! BONUS: C
OUNT: 100: LET Y=5: (count+100)
: FOR S=0 TO 50 STEP 2: BEEP 0
2: NEXT S: LET count=count+1:
LET snappers=snappers+1: GO TO 1
000
5000 BEEP 05,10: BEEP 05,20: F
OR U=0 TO 10: IF RTTR (N,H)=57 T
HEN BEEP 01,10: BEEP 01,20: LE
T S=5+100: GO SUB 9000
6030 PRINT AT N,H: INK 3:"T": BE
EP 05,U: PRINT AT N,H:" " : IF U
<5 THEN (U/5) THEN PRINT AT N,H:"
"
6050 LET N=N+1: NEXT U: RETURN
7000 PRINT AT X,Y: FLASH 1: OVER
1:" " : RT X+1,Y "FE": FOR U=25
TO 50 STEP 5: BEEP 05,U: BEEP
05,U-25: NEXT U: LET LIVES=LIVE
S-1
7010 IF LIVES<1 THEN GO TO 8000
7020 GO TO 1000
8000 PRINT AT 0,0:"HIT ANY KEY T
O RESTART": IF H$<S THEN LET H$=
S
8010 IF INKEY$="" THEN GO TO 80
10
8020 IF INKEY$="" THEN GO TO 2
8030 GO TO 8020
9000 IF N=BIRD1 AND H=BIRD2 THEN
LET BIRD2=3: RETURN
9010 IF N=R(1) AND H=B(1) THEN L
ET A(1)=4: LET B(1)=4: LET D(1)=
2: LET R$(1)="I": RETURN
9020 IF N=R(2) AND H=B(2) AND SN
APPERS>1 THEN LET A(2)=4: LET B(
2)=4: LET D(2)=2: LET R$(2)="I":
RETURN
9030 IF N=R(3) AND H=B(3) AND SN
APPERS>2 THEN LET R(3)=4: LET B(
3)=4: LET D(3)=2: LET R$(3)="I":
RETURN
9040 IF N=R(4) AND H=B(4) AND SN
APPERS>3 THEN LET A(4)=4: LET B(
4)=4: LET D(4)=2: LET R$(4)="I":
RETURN
9050 IF N=R(5) AND H=B(5) AND SN
APPERS>4 THEN LET A(5)=4: LET B(
5)=4: LET D(5)=2: LET R$(5)="I":
RETURN

```

BY NIGEL PERCY

RUNS ON A SHARP MZ-BOX IN 3K

USR calls and specialised Peeks and Pokes

USR (68) — Starts a sound after a value other than zero has been poked into locations 4514 or 4513

USR (71) — Stops the sound

USR (62) — Emits a short beep

USR (3494) — Stops some of the screen noise when laser is fired

POKE 10167,1 — Switches off the peek protect on Sharp Basic to allow Peek (17828)

PEEK (17828) — Returns the ASC value of the current key being pressed (for continuous movement of laser)

List of main variables

TL — Time limit of game in seconds

Y — Random position of blocks

P — Target poke code

T — Position of target

X — Position of laser gun

P1 — Movement key input

TI\$ — Internal timer

F — Position of laser bullet

H — High score

F\$ — Message which is flashed on screen

If you like taking pot shots at those bobbing ducks and targets you find in fairground shooting galleries you'll enjoy this game. The object is to shoot down as many targets within one minute as you can. Each target is worth 100 points — and if you shoot down all nine you'll be rewarded with a 500 point bonus and another crack at the game. However, each time you win an extra go the time limit gets shorter. The targets are represented by the numbers 1-9. They appear at random among a "battlefield" of blocks. If you hit a block with a blast from your laser gun instead of a target number you will lose 10 points — and valuable time. Once one target is hit another appears to take its place until you have destroyed all nine. Your score and the high score are displayed throughout the game.

You'll be hooked from the moment you start blasting away — those targets have an annoying habit of avoiding you!


```

1 POKE10167,1:TL=50
2 PRINT"00000000":TAB(14):"SHOOT OUT"
4 PRINTTAB(16):"BOY NIGEL PERCY (C) 1982"
5 PRINTTAB(11):"DO YOU REQUIRE INSTRUCTIONS"
6 GETAB:IFAB="":THENA="Y" OR "N"
7 IFAB="Y":THENGO:SUB91:GOTO10
8 IFAB="N":THEN10
9 GOTO6
10 PRINT"X"
11 FORI=53288TO53327
12 POKEI,208:POKEI+920,208
13 NEXT
14 FORI=53328TO54168STEP40
15 POKEI,208:POKEI+39,208
16 NEXT
17 FORI=1TO110
18 Y=INT(780*RNDD(1))+53288
19 IFPEEK(Y)<>0THEN18
20 FORCY,67:NEXT
21 P=33
22 T=INT(780*RNDD(1))+53288
23 IFPEEK(T)<>0THEN22
24 POKEY,P
25 X=54169:POKEY,31
26 GO:SUB27:TI="000000":GOTO28
27 PRINT"0"
28 GETAB:P=PEEK(17828):IFP1=0THEN37
29 IFVAL(TI)>=TLTHEN72
30 IFP1=65THENM=1:GOTO34
31 IFP1=68THENM=1:GOTO34
32 IFP1=76THENM=1:GOTO34
33 GOTO37
34 POKEY,0
35 IFPEEK(XAM)<>0THENPOKEY,31:GOTO37
36 X=X+M:POKEY,31
37 IFINT(15*RNDD(1))+11=1THEN39
38 GOTO28
39 ONINT(4*RNDD(1))+11GOTO40,41,42,43
40 M=-1:GOTO44
41 M=1:GOTO44

```

SHOOT OUT

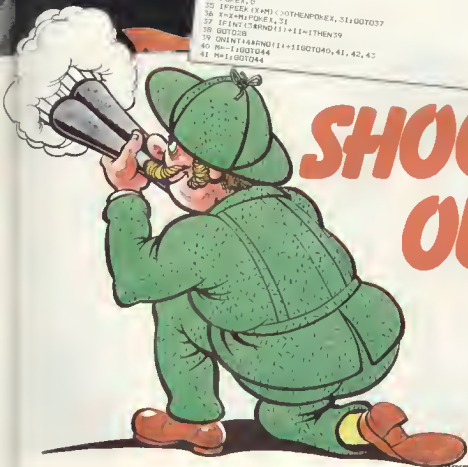
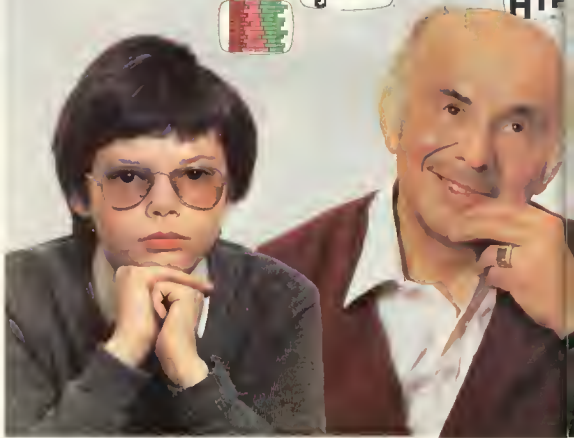


Illustration: Terry Rogers

For those that do,



$$\frac{dy}{dx} - y = f(x)$$
$$\frac{dy}{dx} - b \frac{dy}{dx} = f(x)$$



those that don't



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```

42 M=-40:GOTO44
43 M=40
44 POKE T,0
45 IFPEEK (T+M) > 0 THEN POKE T, P:GOTO28
46 IF T+M < 0 THEN POKE T, P:GOTO28
47 T=T+M:POKE T, P:GOTO28
48 P=P-40
49 POKE T,0
50 IFPEEK (F-40) > 0 THEN S5
51 F=F-40:USR(3494):POKE F,121
52 POKE4514,1:USR(6811):USR(711):GOTO49
53 IFPEEK (F-40) < 67 THEN S39
54 IFPEEK (F-40) < 67 THEN S39
55 S=S-100:BOSUB27
56 FORDL=1TOS0
57 POKE T,INT(50*RAND(1)+18811)POKE4513,INT(255*RAND(1)+111):USR(68):NEXT:USR(711)
58 POKE T,0
59 P=P+11:IFP=42 THEN S63
60 T=INT(700*RAND(1))+532881
61 IFPEEK (T) > 0 THEN S0
62 POKE T,P:GOTO28
63 F=S
64 PRINT "B":BOSUB85 WELL DONE ... !!!
65 PRINT "B":BOSUB85
66 PRINT "B":WELL DONE YOU HAVE DESTROYED ALL THE"
67 PRINT "B":500 POINTS AND YOU HAVE RECEIVED A BONUS"
68 TL=TL-10:IF TL < 10 THEN TL=10
69 PRINT "B":PRESS [SPACE] KEY FOR EXTRA GO"
70 BETA:IFAS=" " THEN I0
71 GOTO70
72 F=S
73 PRINT "B":YOU HAVE RUN OUT OF TIME, !!!
74 PRINT "B":BAD LUCK !!! YOU HAVE RUN OUT OF TIME"
75 PRINT "B":BUT YOU SCORED "S": " POINTS"
76 IF S > 10 THEN S=10
77 S=0:TL=60
78 PRINT "B":DO YOU WANT ANOTHER GAME (Y OR N)?"
79 BETA:IFAS="Y" THEN S79
80 IFAS="Y" THEN S10
81 IFAS="N" THEN S3
82 GOTO79
83 PRINT "B":*****"
84 END
85 FORDL=1TOS0
86 PRINT "B":*****"
87 FORDL=1TOS0:NEXT
88 PRINT "B"
89 FORDL=1TOS0:NEXT
90 NEXT:RETURN
91 PRINT "B":TAG(14): " SHOOT OUT"
92 PRINT "B":TAG(14): " SHOOT OUT"
93 PRINT "B":The object of this game is to shoot"
94 PRINT "B":as many targets (each worth 100 points)"
95 PRINT "B":in 1 minute. The targets are represented"
96 PRINT "B":by the numbers 1-9 depending on how"
97 PRINT "B":many you have shot down."
98 PRINT "B":If you shoot all nine in one minute"
99 PRINT "B":you will receive a bonus of 500 points"
100 PRINT "B":and an extra go - every time you"
101 PRINT "B":receive an extra go - every time you"
102 PRINT "B":will decrease by ten seconds."
103 PRINT "B":PRESS [SPACE] FOR FURTHER INSTRUCTIONS"
104 BETA:IFAS=" " THEN I06
105 GOTO104
106 PRINT "B":2To move your laser base you use the"
107 PRINT "B":following keys:-"
108 PRINT "B":A - LEFT D - RIGHT"
109 PRINT "B":You use key 'L' to fire the laser"
110 PRINT "B":The targets are moving randomly in a"
111 PRINT "B":beam."
112 PRINT "B":Each time you destroy one of these"
113 PRINT "B":blocks your score is decremented by"
114 PRINT "B":1"
115 PRINT "B":PRESS [SPACE] TO PLAY"
116 BETA:IFAS=" " THEN RETURN
117 GOTO116

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READING 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 94



You'll have to get the point quickly if you want to survive the deadly alien spikes!

The aim of the game is to defend the top layer of a 20 level grid from these nasty spikes which will zap you with electricity should they reach your lesser base. The spikes radiate from the centre of the screen and gradually move towards you — rising through the many levels. You move about on the top level ready to blast the spikes using a joystick controller. When you are directly above a spike fire!

Points are scored for each spike shot — more points are awarded for a rapid destruction of a spike. Once shot they fall back to the centre to start rising up at you once more.

As the game progresses the spikes get faster and more numerous — and are worth more points. Beware — sometimes a spike will rise up in the middle of the screen where you will not be able to see it — so you will have to keep alert. The authors high score is 8240 — can you beat it?

Illustrated by Terry Rogers

```

10 PCLERRS
20 POKE&NFFD7,0
30 GOTO220
40 LINE(20*X1,20*Y1)<(120,100),PSET
50 LINE(20*X1,20*Y1)<(120,100),PRESET
60 PLAY=T25505AGGDDBADCEE"
70 FOR1=1TON
80 IFX1=RX(1) RND Y1=RY(1) THEN120
90 NEXT1
110 RETURN
120 PLAY=T20005BAGFEDC048GFEDC03BAGFEDC02BAGFEDC01BAGFEDC"
130 PMODE4,5,SCREEN1,1
140 S=S+(20-AZ)*K(L+D)
150 K=K+1:IFK=5THEN K=0:D=D+1
160 L=L+.2
170 IFRND(8)=1THENN=N+1
180 RX(1)=RND(13)-1:RY(1)=RND(10)-1:RZ(1)=0
190 C$=""
200 PMODE4,1,SCREEN1,1
210 RETURN
220 CLS:PRINT@10,"SPIKE RTRCK"
230 PRINT PRINT" USE THE RIGHT JOYSTICK TO MOVE"
240 PRINT PRINT"ABOUT THE TOP LAYER OF THE GRID."
250 PRINT PRINT" WHEN DIRECTLY ABOVE A SPIKE"
260 PRINT PRINT" FIRE !"
270 PRINT PRINT PRINT"PRESS 'Y' TO SHOW GRID AND START"
280 IFINKEY"<"="Y" THEN 280
290 GOSUB670
300 DEF FNR(RX)=(20*RX(1))-120)*RZ(1)/20+120
310 DEF FNB(RY)=(20*RY(1))-100)*RZ(1)/20+100
320 D=2
330 PMODE4,1,SCREEN1,1:PCLS0
340 LINE(241,0)<(255,191),PSET,BF
350 LINE(0,181)<(255,191),PSET,BF
360 FOR1=1TO10
370 RX(1)=RND(13)-1:RY(1)=RND(10)-1:RZ(1)=0
380 NEXT1
390 N=1
400 P=PEEK(65280)
410 X=INT(JOYSTK(0)/5.25)
420 Y=INT(JOYSTK(1)/7)

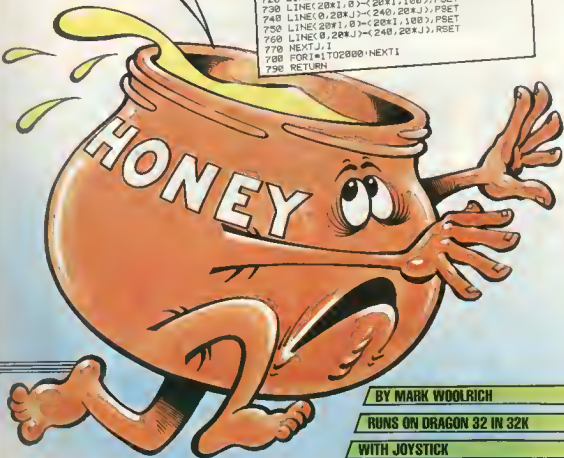
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SPIKE ATTACK


```

430 IFR=125 OR R=254 THEN GOSUB40
440 PRESET(20*X1,20*Y1)
450 X1=X:Y1=Y
460 PSET(20*X1,20*Y1,1)
470 FORI=1TON
480 IF A2(I)=20 THEN 540
490 IFRND(10-L)*D THEN A2(I)=A2(I)+1
500 LINE(FNA(A2(I)),FNB(A2(I)))-(120,100),PSET
510 SOUND10*A2(I)+1,1
520 NEXTI
530 GOTO400
540 RLAY"10001CDEFGAB02CDEFGAB03CDEFGAB04
CDEFGAB05CDEFGAB"
550 FORJ=0TO20
560 CIRCLE(A2(I)*20,AY(I)*20),J,1
570 NEXTJ
580 FORI=1TO1000
590 RMODE4,5:SCREEN1,1
600 PMODE4,1:SCREEN1,1
610 NEXTI
620 CLS:PRINT@263,"**SCORE=";S;"**"
630 POKE@HFFD6,0
640 END
670 PMODE4,5:SCREEN1,1:RCLS0
680 LINE(240,0)-(255,191),PSET,0F
690 LINE(0,100)-(255,191),PSET,0F
700 FORI=0TO12
710 FORJ=0TO9
720 LINE(20*I,20*J)-(120,100),RSET
730 LINE(20*I,0)-(20*1,100),PSET
740 LINE(0,20*J)-(240,20*J),PSET
750 LINE(20*1,0)-(20*1,100),PSET
760 LINE(0,20*J)-(240,20*J),RSET
770 NEXTJ,1
780 FORI=1TO2000:NEXTI
790 RETURN

```



BY MARK WOOLRICH

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The Family Computer.

Before we designed them, we thought about who was actually going to use them.

One day our computers might be playing games; next, they're wrestling with household budgets, teaching geography to an 8-year-old; or printing letters.

In other words, we designed our computers and software for as many applications as a family has ideas. (Now the ATARI 800 Computer has 48K RAM, there's even more memory for even more applications.)

Next we built in high-resolution graphics. Inside our computers, we have a microprocessor whose only job is to operate our graphics.

(All told, you can choose up to 16 different colours in 16 intensities, which gives you a spectrum of 256 different shades.)

In fact, our computers divide the screen up into 60,000 tiny points, each one of which can be changed without affecting the other.

A friend not a fiend.

We also looked at ways to make computers rather friendlier.

On the ATARI 400 Computer, we've incorporated touch-sensitive keys with ridges, so fingers won't slip; on the ATARI 800 Computer, we have keys much as you'd find on a standard typewriter.

You can talk to your computer in a choice of languages (five for the Atari 400, nine for the Atari 800), including ATARI BASIC, using software which you load in on cartridge, cassette, or disk.

For our computers, we have one of the largest software libraries in the world: everything from speech synthesis to sophisticated data management.

No doubt you know all about our famous games such as PAC-MAN®, SPACE INVADERS® and STAR RAIDERS™, winner of the 1982 Game of the Year Award.

However, we also boast home and office application software as well

Atari 400 and 800 Home Computer Technical Specifications.

Colour Capabilities: Choose from 16 colours, and 16 intensities (up to a total of 256 shades).

Sound: Four independent sound synthesizers for musical tones and games sounds. Three and one half octaves. Variable volume and tone for each voice.

Display: Three text modes: 24 lines of 40 characters, double-width characters, or double-height, double-width characters. Nine graphic modes: from 40 columns by 24 rows up to 320 columns by 192 rows.

Memory: Includes a built-in 10K Read Only Memory (ROM) Operating System with 48K Random Access Memory (ATARI 800) and 16K Random Access Memory (ATARI 400).

C.P.U.: 6502B Microprocessor 0.56 micro-second cycle. 1.8MHz

Special Features: Three customised integrated circuits. **Extended Graphics Functions:** High-resolution graphics. Multi-coloured character set. Software screen switching. Mixed text and graphics modes.

Multiple re-defined character sets. Player missile (sprite) graphics. Fine screen scrolling in any direction. Changeable colour registers. Smooth character movement.

Peripherals: A range of peripherals and accessories that are available now.

as educational programs to satisfy the most enquiring mind.

You can learn French, Spanish, German or Italian on our computers and through our unique 'sound through' system you'll hear the language and learn it the way you learnt your mother tongue. (Other computers will leave you speechless.)

You can teach yourself touch typing, compose and play your own music or teach a child the alphabet.

On another program you can find out if your current mortgage is giving you the best value for money, while yet another program will answer a question that has vexed mankind for generations: "Where does all my money go?"

At the same time, the outstanding VisiCalc® program is available for the ATARI 800 Computer.

Write your own programs.

As if all that isn't enough, through Atari's Program Exchange (APX), you can have access to a wide range of the most imaginative programs written by our users.

Or you can learn to write your own programs with the help of our 'Invitation to Programming'™ series, using our unique 'sound through' system.

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More of what home computers are for.

SQUAWK



BY GRAEME HUTCHINSON

IN days of old gladiators fought it out in a vast arena. In the future they will battle it out within the confining walls of a video maze.

Once one lucky gladiator finds the power pill that is hidden in the maze he will be able to shatter walls with a single blow.

This is a two-player battle set in a maze. The players start off at opposite screens and the all important power pill is in the centre. On touching the pill you can move faster and walk through the red walls which appear randomly throughout the game.

The power pill only has a limited effect however, and after a random period it will be repositioned in the maze. Two pills may appear and either can be used. When a gladiator turns red he can kill his opponent. But he must stay away from the walls of the maze as these carry a deadly charge. When a player has lost all his lives the game is over. Squeak features a starting display which rivals anything we have seen as the Atari - worth entering just for that.

```

5 GOTO 1600
9 REM **PLAYER MOVEMENTS**
10 S=STICK(0):S1=STICK(1)
15 IF S=15 AND S1=15 THEN 19
16 SOUND 1,00,12,12
19 IF S=14 THEN Y=Y-1:B=USR(UP,PMBAS+102
4+Y)
20 IF S1=14 THEN Y1=Y1-1:B=USR(UP,PMBAS+
1280+Y1)
25 IF S=11 THEN X=X-SP1
30 IF S1=11 THEN X1=X1-SP2
35 IF S<13 THEN 45
40 B=USR(DOWN,PMBAS+1024+Y):Y=Y+1
45 IF S1<13 THEN 55
50 B=USR(DOWN,PMBAS+1280+Y1):Y1=Y1+1
55 IF S=7 THEN X=X+SP1
60 IF S1=7 THEN X1=X1+SP2
61 POKE HPOS0,X:POKE HPOS1,X1:SOUND 1,
0,0,0
62 IF FLAG=1 THEN T=T+1:IF T<500 THEN GO
0
63 W=W+1:IF W>150 THEN GOSUB 75
65 IF PEEK(53252)<0 THEN 170
66 IF PEEK(53253)<0 THEN 200
68 IF PEEK(53260)<0 OR PEEK(53261)<0 T
HEN 100
72 GOTO 10
75 WY=(INT(RND(0)*8)+1)*8+4:WX=(INT((R
ND(0)*11)+4)*10)-5
80 COLOR INT(RND(0)*2):PLOT WX,WY-B:DRAW
TO WX,WY+B:PLOT WX-10,WY:DRAWTO WX+10,WY
:W=0:RETURN
99 REM **COLLISION BETWEEN PLAYERS**
100 IF PEEK(53260)=4 THEN 150
101 IF PEEK(53261)=4 THEN 160
108 REM ***P.L./F.L. DIFF. COLL.***
109 IF PEEK(704)=25 THEN 200
110 IF PEEK(705)=25 THEN 175
111 IF PEEK(53260)=2 THEN C0=C0-1:C1=C1-
1:POKE 657,13:IF C0<0:POKE 656,0:POKE 657,3
S:POKE 657,13:IF C1<0 THEN 500:GOSUB 300
112 IF C0=0 OR C1=0 THEN 500:GOSUB 300
120 GOTO 1000
149 REM **CLEAR P3 & CHANGE VARS.**
150 PP1=PP1+1:IF PP1=5 THEN SOUND 1,100,
10,10:C0=C0+1:POKE 656,0:POKE 657,13:IF C
0:PP1=0
155 FOR Q=PMBAS+1536 TO PMBAS+1792:POKE
Q,0:NEXT Q:POKE 704,25:SP1=2:POKE 5327B,
0:FLAG=1:GOSUB 250:GOTO 10
159 REM **CLEAR P3 & CHANGE VARS.**
160 PP2=PP2+1:IF PP2=5 THEN SOUND 1,100,
10,10:C1=C1+1:POKE 656,0:POKE 657,13:IF C
1:PP2=0
165 FOR Q=PMBAS+1536 TO PMBAS+1792:POKE
Q,0:NEXT Q:POKE 705,25:SP2=2:POKE 5327B,
0:FLAG=1:GOSUB 250:GOTO 10
170 REM **COLLISION & COUNTER (0)**
171 IF PEEK(704)=25 AND PEEK(53252)=1 TH
EN POKE 5327B,0:GOTO 10
175 C0=C0-1:IF C0=0 THEN 500
180 POKE 656,0:POKE 657,13:IF C0:GOSUB 30
0

```

```

185 GOTO 1000
199 REM **COLLISION & COUNTER (1)**
200 IF PEEK(705)=25 AND PEEK(53253)=1 TH
EN POKE 5327B,0:GOTO 10
204 C1=C1-1:IF C1=0 THEN 500
205 GOSUB 300
210 POKE 656,0:POKE 657,13:IF C1:GOTO 100
0
250 FOR C=56 TO 156 STEP 5:GOUND 1,C,10,
1,0:NEXT C:SOUND 1,0,0,0:RETURN
300 FOR C=15 TO 2 STEP -1:FOR Z=0 TO 5:S
OUND 3,250,6,C:NEXT Z:NEXT C:SOUND 3,0,0
,0:RETURN
500 REM **GAME OVER ROUTINE**
501 FOR N=0 TO 160:FOR Z=15 TO 0:SOUND 0
,240,4,Z:POKE 712,PEEK(53770):NEXT Z:NEX
T N:SOUND 0,0,0,0:POKE 712,28
502 IF C0=0 AND C1=0 THEN ? "THE BATTLE
IS DRAWN"
503 IF C0=0 THEN ? "PLAYER 2 IS THE WIN
NER"
504 IF C1=0 THEN ? "PLAYER 1 IS THE WIN
NER"
505 ? "PRESS TRIG TO RESTART"
510 IF STRIG(0)=0 OR STRIG(1)=0 THEN 150
0
515 GOTO 510
800 FLAG=0:T=0:SP1=1:SP2=1:X2=INT(RND(1)
+141)+53:Y2=INT(RND(1)*126)+45:POKE 704,
150:POKE 705,160
810 RESTORE (1074):GOTO 1000
899 REM **P/M INITIALISATION**
900 POKE 712,20:PP1=0:PP2=0:C0=5:C1=5:HP
OSP0=5324B:HPOS1=53249:HPOS2=53250
1000 I=PEEK(1065)-24:POKE 54279,I
1010 PMBAS=I+256
1020 FOR Q=PMBAS+1024 TO PMBAS+1792:POKE
Q,0:NEXT Q
1030 POKE 656,0:SP1=1:SP2=1:X=52:Y=45:X1
=-194:Y1=169:X2=123:Y2=108:POKE 5327B,0:R
ESTORE
1040 POKE 704,160:POKE 705,160:POKE 706,
25:POKE HPOS0,Y:POKE HPOS1,X1
1045 POKE 559,62:POKE 53277,3:FOR Q=0 TO
8:READ P:POKE PMBAS+1024+Y,Q:P:NEXT Q
1050 FOR Q=0 TO 8:READ P:POKE PMBAS+1280
+Y1+Q,P:NEXT Q
1060 FOR Q=0 TO 8:READ P:POKE PMBAS+1536
+Y2+Q,P
1065 POKE HPOS2,X2:NEXT Q
1070 DATA 0,30,63,45,30,30,51,33,33
1072 DATA 0,24,60,90,126,60,24,36,66
1074 DATA 0,24,126,66,219,195,94,126,24
1080 POKE 5327B,0:GOSUB 1100:GOSUB 1130:
GOTO 10
1100 UP=ADR(UPCODE$)
1110 FOR I=UP TO UP+20:READ B:POKE I,B:N
EXT I:RETURN
1120 DATA 104,104,133,204,104,133,203,16
0,1,177,203,136,145,203,200,200,192,11,2
08,245,96

```



```

1130 DOWN=ADR(DOWNCODES)
1140 FOR I=DOWN TO DOWN+20:READ B:POKE I
B:NEXT I:RETURN
1150 DATA 104,104,133,204,104,133,203,16
0,10,177,203,200,145,203,136,136,192,255
,208,245,96
1499 REM **GRAPHICS DISPLAY**
1500 GRAPHICS 7:COLOR 3
1510 ? "LIVES LEFT=5" LIVES LEFT
=5"
1510 RESTORE (1520):FOR Z=1 TO 15:READ A
,B,C,D: PLOT A,B: DRAWTO C,D:NEXT Z
1520 DATA 54,4,54,12,14,36,14,44,54,68,5
4,76,104,68,104,76,34,28,34,44,104,52,12
4,52,54,44,54,68,54,20,54,36,24,44
1521 DATA 24,60,24,20,24,36,104,44,104,6
0,144,36,154,36,134,52,134,60,94,4,94,12
,94,60,94,68
1530 FOR Z=1 TO 24:READ A,B,C,D,E,F: PLOT
A,B: DRAWTO C,D: DRAWTO E,F: NEXT Z
1540 DATA 34,12,14,12,14,28,84,12,64,12,
64,28,124,12,144,12,144,28,124,28,114,28
,114,36,104,36,104,28,94,28,94,36
1550 DATA 84,36,84,28,44,28,44,52,34,52,
14,52,14,68,34,68,44,52,64,68,84,68,124,
68,144,68,144,52,54,20,34,36,94,12,104,12
1560 DATA 94,20,74,20,74,36,94,12,104,12
,104,20,114,12,114,20,134,20,124,36,134,
36,134,20,54,44,74,44,74,60,94,52
1570 DATA 94,60,74,60,44,12,44,20,24,20,
24,60,44,60,44,68,84,52,84,44,104,44,114
,44,144,44,144,36,134,60,114,60
1580 DATA 114,60,4,4,154,4,154,76,4,4,4,
76,154,76
1590 BOTO 900
1600 CLR :POKE 752,1:DIM D$(3),C$(32),UP
CODE$(21),DOWNCODE$(21):TIME=10:POKE 82,
0:GOSUB 1879:GOSUB 1680
1610 C$(15,15)=CHR$(22)
1620 X=USR(ADR(C$),TIME)
1630 GRAPHICS 7+32:POKE 752,1:SETCOLOR 2
,0,0
1640 ? " A GAME FOR THE ATARI 400/800"
1642 ? " by"
1644 ? " GRAEME HUTCHESON (PRESS
TRIG)"
1650 FOR I=1 TO 750:IF STRIG(0)=0 OR STR
IG(1)=0 THEN 2000
1660 NEXT I:POKE 77,254:GOTO 1600
1670 REM
1680 GRAPHICS 23:SETCOLOR 0,0,0:SETCOLOR
1,0,14:SETCOLOR 2,0,0:SETCOLOR 4,0,0
1690 COLOR 2:FCOLOR=1
1700 RESTORE (1820)
1710 READ D$:IF ASC(D$)<64 THEN 1800
1720 IF D$="P" THEN READ ROW,COLUMN:GOSUB
B 1810:PLOT COLUMN,ROW:GOTO 1710
1730 IF D$="R" THEN READ RORIGIN,CORIGIN
:GOTO 1710
1740 IF D$="S" THEN READ VOICE,PITCH:SOU
ND VOICE,PITCH,10,6:GOTO 1710
1750 IF D$="D" THEN 1710
1760 IF D$="END" THEN RETURN
1770 IF D$<>"F" THEN 1710
1780 READ ROW,COLUMN:GOSUB 1810:POSITION
COLUMN,ROW:POKE 765,FCOLOR
1790 XIO 18,#6,0,0,"S":PLOT COLUMN,ROW:
GOTO 1710
1800 ROW=VAL(D$):READ COLUMN:GOSUB 1810:
DRAWTO COLUMN,ROW:GOTO 1710
1810 ROW=ROW+RORIGIN: COLUMN=COLUMN+CORIG
IN:RETURN

```

```

1820 DATA R,15,5,5,3,205
1821 DATA P,2,7,2,13,4,16,6,18,8,19,8,13
,F,6,11,6,7,8,7,10,9,10,13,12,16,14,18,1
6,19
1822 DATA 19,19,21,18,23,16,25,13,25,7,P
,17,7,19,9,F,19,11,F,17,13,F,15,11,F,15,
9
1823 DATA P,25,13,F,25,7,F,23,4,F,21,2,F
,19,1,F,17,1,17,7,P,15,9,F,14,7,F,12,4,F
,10,2,F,8,1,F,6,2,F,4,8,F,2,7
1830 DATA R,25,28,8,2,180
1831 DATA P,2,7,2,13,4,16,6,18,8,19,19,1
9,21,18,23,16,P,8,7,6,9,F,6,11,F,8,13,F,
19,13,F,21,11,21,9,7,8,7
1832 DATA P,23,16,27,19,29,16,F,25,13,F,
25,7,F,23,4,F,21,2,F,19,1,F,8,1,F,6,2,F,
4,4,F,2,7
1840 DATA R,15,50,8,1,155
1841 DATA P,2,13,2,19,19,19,21,18,23,16,
25,13,25,7
1842 DATA P,2,19,2,13,19,13,F,21,11,21,9
,19,7,2,7,2,1,P,25,7,F,23,4,F,21,2,F,19,
1,F,2,1
1843 DATA P,20,13,F,2,13
1850 DATA R,25,72,8,0,120
1851 DATA P,2,7,2,13,4,16,6,18,8,19,19,1
9,21,18,23,16,25,13,P,8,7,6,9,F,6,11,F,8
,13,F,19,13,F,21,11,21,9,19,7,8,7
1852 DATA P,28,13,25,7,F,23,4,F,21,2,F,1
9,1,F,8,1,F,6,2,F,4,8,F,2,7
1860 DATA R,15,94,8,3,95
1861 DATA P,2,1,2,7,8,13,2,13,2,19,25,19
,25,13,F,19,13,F,13,7,25,7,F,25,1,F,2,1,
2,7,9,13,F,2,13
1870 DATA R,25,116,8,2,70
1871 DATA P,2,1,2,7,11,7,F,19,19,13,14,0
,19,2,19,2,13,F,8,13,F,11,7,P,19,19,25,1
9,25,13,F,19,13,F,16,7,25,7
1872 DATA 25,1,F,2,1
1879 DATA END
1880 RESTORE (1910)
1890 FOR I=1 TO 32:READ C:C$(I)=CHR$(C):
NEXT I
1900 RETURN
1910 DATA 104,104,104,72,162,57,160,0,17
3,0,210,101,20,141,22,208,141,10,212,136
,206,242,202,208,237,104
1911 DATA R,15,233,1,208,228,96
2000 FOR N=0 TO 3:SOUND N,0,0,0:NEXT N:B
GRAPHICS 0:POKE 82,2:POKE 710,210: ? "1?
: ?"
2010 ? " ? " SOUNDN is a two player batt
le game set in a maze. The players are s
ited at opposite corners and "
2015 ? "the Power Pill in the centre. On t
ouching the Pill you move faster and can
walk through RED walls, which"
2020 ? " appear randomly throughout the g
ame. Touch 5 Pills and you gain a life. Wh
en coloured red you can kill"
2025 ? "your opponent by touching him. If
you touch any wall you also lose a lif
e."
2030 ? "The Power Pill only has a limite
d effect and after a certain time it
is repositioned in the maze."
2040 ? "Two Power Pills may appear an
d either can be used. When a player ha
s lost all his lives the game"
2050 ? " is over."
2060 ? " ? ? "PRESS TRIG. TO START":GOTO
510

```


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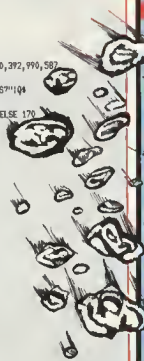
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```

10 REM <--METEOR-->
20 REM (C)1983 TERRY IRWIN
30 REM IN TI BASIC FOR THE TI99/4A HOME COMPUTER
40 RESTORE 90
50 FOR I=1 TO 5
60 READ DUR,NOTE
70 CALL SOUND(DUR,NOTE,0)
80 NEXT I
90 DATA 330,980,330,988,330,784,330,392,990,587
100 CALL CLEAR
110 INPUT "DO YOU WANT INSTRUCTIONS?"I4
120 IF SEG$(I4,1,1)="" THEN 140
130 IF SEG$(I4,1,1)="" THEN 110 ELSE 170
140 GOSUB 4050
150 CALL CLEAR
160 GOSUB 3060
170 GOSUB 3220
180 TS=0
190 MET=0
200 SWB=0
210 NITS=0
220 DEAD=0
230 CALL SCREEN(5)
240 CALL COLOR(1,5,5)
250 CALL COLOR(3,16,14)
260 CALL COLOR(4,16,14)
270 CALL COLOR(13,16,1)
280 CALL COLOR(14,9,1)
290 CALL COLOR(9,2,16)
300 CALL COLOR(10,2,5)
310 CALL COLOR(11,2,5)
320 CALL COLOR(12,11,5)
330 CALL COLOR(8,14,14)
340 RANDOMIZE
350 RESTORE 410
360 FOR I=91 TO 122
370 IF (I>91)*((I<96))*((I>99))*((I<104)) THEN 400
380 READ A$
390 CALL CHAR(I,A$)
400 NEXT I
410 DATA FFFFFFFFFFFFFFFF,FFFFFFFFFFFFFFF,FFFFFFFFFFFFFFF,F
F999999999999F,F,F7E7C3C0E7E2FF,80C0E0F0F8FFTF
420 DATA 01061E30FCFB0F0,7F7F3F1F1FFDFB,E0E0E0F0F8FC7F,8
060783C3F1F0F0F,0103070F1FFFFF
430 DATA 0707070F1F3FFF,FEFEFCFCFBF80E1F,18181818181818,0
F0FCFFCFB8B18,030F3FFF3F1F1818
440 DATA 1818181818181F1F,181818181818F8FB,FCF0E0C0C03FFF,0
0B83181C387C7FF,1F07070383E1F8FF
450 DATA 010204083070E040,804020100CE0702,000000EF
460 REM CITY OUTLINE
470 CALL HCHAR(23,5,96,24)
480 CALL HCHAR(24,4,9,5)
490 CALL HCHAR(24,29,96,2)
500 CALL HCHAR(24,5,91,24)
510 CALL VCHAR(21,5,97,2)
520 CALL VCHAR(21,5,97,2)
530 CALL VCHAR(21,6,97,2)
540 CALL VCHAR(17,9,97,6)
550 CALL VCHAR(20,11,97,3)
560 CALL VCHAR(20,12,97,3)
570 CALL VCHAR(20,13,97,3)

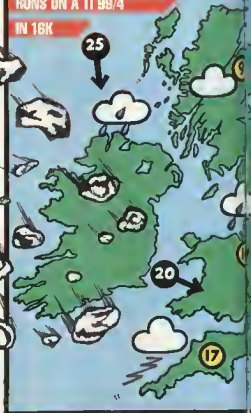
```



BY TERRY IRWIN

RUNS ON A TI 99/4

IN 16K



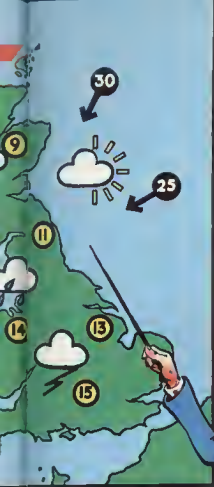
METEOR

And now for the weather forecast. Heavy meteor showers will spread from the West towards evening and will cover the entire city area by morning... Heavy weather indeed! And for you, the commander of the city defence systems this forecast means a busy time ahead.

To fend off the meteor showers you are armed with missiles and a defence shield which covers the city area. Only one missile can be launched at each meteor, and they are programmed to explode near the falling lumps of rock — a direct hit may not destroy a meteor.

You may use your defence shield for periods of just 10 seconds at a time — which gives you a chance to stop the destruction of your city should a meteor slip past your missiles.

If enough meteors get through to penetrate the city foundations then the nuclear power plant will explode wiping out the entire population. There are three skill levels and our review team said that even the first is very difficult. The graphics are excellent and — be warned — the game is very addictive!



```

830 CALL VCHAR(17,3,112,3)
840 CALL VCHAR(17,31,112,3)
850 CALL VCHAR(20,3,99,5)
860 CALL VCHAR(20,31,99,5)
870 CALL VCHAR(12,2,112,4)
880 CALL VCHAR(12,32,112,4)
890 CALL VCHAR(16,2,115)
900 CALL VCHAR(16,32,116)
910 CALL VCHAR(11,2,113)
920 CALL VCHAR(11,32,114)
930 CALL VCHAR(15,3,104)
940 CALL VCHAR(15,4,105)
950 CALL VCHAR(16,3,106)
960 CALL VCHAR(16,4,107)
970 CALL VCHAR(15,30,108)
980 CALL VCHAR(15,31,109)
990 CALL VCHAR(16,30,110)
1000 CALL VCHAR(16,31,111)
1010 REM METEOR
1020 CALL CHAR
(130,"004834108E9641Z2")

```

```

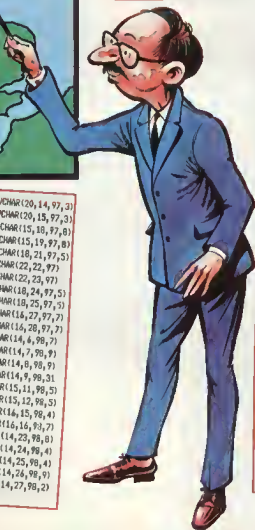
1030 CALL CHAR(133,"00003030")
1040 CALL CHAR(134,"00000000")
1050 CALL CHAR(137,"000000003030")
1060 CALL CHAR(138,"000000000000")
1070 CALL VCHAR(24,6,48,4)
1080 CALL VCHAR(24,25,48,3)
1090 N=0
1100 FOR X=28 TO 5 STEP -1
1110 CALL SOUND
(-500,250,30,500,30,1000,30,-8,X,2)
1120 FOR T=134 TO 137 STEP 3
1130 CALL VCHAR(29-X,X,T)
1140 NEXT T
1150 HY=29-X
1160 CALL MET(0,N,5)
1170 CODE=1
1180 IF S=0 THEN 1210
1190 IF K=48 THEN 1200 ELSE 1210
1200 GOTO 2480
1210 CALL VCHAR(29-X,X,321)
1220 CALL VCHAR(30-X,X-1,0)
1230 IF B<96 THEN 1460
1240 IF O>98 THEN 1440
1250 DEAD=DEAD+100
1260 COSUD 4200
1270 IF B=97 THEN 1310
1280 CALL VCHAR(30-X,X-1,1301)
1290 CALL VCHAR(30-X,X-1,117)
1300 GOTO 1370
1310 Y=30-X
1320 Z=X-1
1330 IF ((Z-Y)*((Y-23)*((Y-1611)
THEN 1350
1340 GOTO 1290
1350 CALL VCHAR(Y,Z,130)
1360 CALL VCHAR(Y,Z,98)
1370 CALL SOUND(-800,-7,0)
1380 FOR DELAY=1 TO 200
1390 NEXT DELAY
1400 IF (30-X)=23 THEN 3640
1410 MET=MET+1
1420 IF MET>METEOR THEN 3420
1430 GOTO 1470
1440 CALL SOUND(-300,-7,0)
1450 CALL VCHAR(30-X,X-1,130)
1460 NEXT X
1470 FOR F=1 TO 104RND
1480 N=0
1490 SHD=0
1500 MET=MET+1
1510 IF MET>METEOR THEN 3420
1520 X=INT(28RND)
1530 IF X<5 THEN 1520
1540 FOR Y=1 TO 24
1550 CALL SOUND
(-500,250,30,500,30,1000,30,-8,27-Y)
1560 FOR T=133 TO 137 STEP 4
1570 CALL VCHAR(Y,X,T)
1580 NEXT T
1590 IF ((SHD>0)*((SHD<5) THEN 2970
1600 NY=Y

```

```

580 CALL VCHAR(20,14,97,3)
590 CALL VCHAR(20,15,97,3)
600 CALL VCHAR(15,18,97,8)
610 CALL VCHAR(15,19,97,8)
620 CALL VCHAR(18,21,97,5)
630 CALL VCHAR(22,22,97)
640 CALL VCHAR(22,23,97)
650 CALL VCHAR(18,24,97,5)
660 CALL VCHAR(18,25,97,5)
670 CALL VCHAR(16,27,97,7)
680 CALL VCHAR(16,28,97,7)
690 CALL VCHAR(14,6,98,7)
700 CALL VCHAR(14,7,98,9)
710 CALL VCHAR(14,8,98,9)
720 CALL VCHAR(14,9,98,31)
730 CALL VCHAR(15,11,98,5)
740 CALL VCHAR(15,12,98,5)
750 CALL VCHAR(16,15,98,4)
760 CALL VCHAR(16,16,98,7)
770 CALL VCHAR(14,23,98,8)
780 CALL VCHAR(14,24,98,4)
790 CALL VCHAR(14,25,98,4)
800 CALL VCHAR(14,26,98,9)
810 CALL VCHAR(14,27,98,2)
820 REM LASERS

```



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```

1900 FOR DELAY=1 TO 200
1910 NEXT DELAY
1920 IF (Y+1)=22 THEN 3640
1930 GOTO 1970
1940 CALL SOUND(-300,-7,0)
1950 CALL VCHAR(Y+1,X,130)
1960 NEXT Y
1970 NEXT F
1980 M=0
1990 FOR X=5 TO 28
2000 CALL SOUND(-500,250,30,500,
30,1000,30,-8,31-X)
2010 FOR T=133 TO 138 STEP 5
2020 CALL VCHAR(X-4,X,T)
2030 NEXT T
2040 MY=X-4
2050 CALL KEY(0,K,S)
2060 CODE=3
2070 IF S=0 THEN 2100
2080 IF K=49 THEN 2090 ELSE 2100
2090 GOTO 2410
2100 CALL VCHAR(X-4,X,32)
2110 CALL GCHAR(X-3,X+1,0)
2120 IF D<96 THEN 2330
2130 IF D>98 THEN 2310
2140 DEAD=DEAD+100
2150 GOSUB 4200
2160 IF D=97 THEN 2180
2170 GOTO 2210
2180 Y=X-3
2190 Z=X+1
2200 IF ((Z=23)*(Y=22))+((Z=24)
+(Z=25))*((Y<23)*(Y>17))) THEN 2240
2210 CALL VCHAR(X-3,X+1,130)
2220 CALL VCHAR(X-3,X+1,119)
2230 GOTO 2260
2240 CALL VCHAR(Y,Z,130)
2250 CALL VCHAR(Y,Z,98)
2260 CALL SOUND(-800,-7,0)
2270 FOR DELAY=1 TO 200
2280 NEXT DELAY
2290 IF (X-3)=23 THEN 3640
2300 GOTO 2340
2310 CALL SOUND(-300,-7,0)
2320 CALL VCHAR(X-3,X+1,130)
2330 NEXT X
2340 C=10*RD
2350 M=0
2360 NET=MET+1
2370 IF MET=METFOR THEN 3420
2380 IF C<1 THEN 1100
2390 IF C<6 THEN 1470
2400 IF C=10 THEN 1990
2410 IF M=1 THEN 2420 ELSE 2430
2420 ON CODE GOTO 1210,1710,2100
2430 FOR L=1 TO 13 STEP 2
2440 CALL SOUND(-1000,1000,
L,5000,5*L,-6,5*L)
2450 CALL VCHAR(15-L,4*L,120)
2460 CALL GCHAR(14-L,5*L,Q)
2470 CALL GCHAR(14-L,4*L,R)
2480 CALL VCHAR(15-L,4*L,32)

```

```

2490 IF Q>127 THEN 2590
2500 IF R>127 THEN 2590
2510 IF (15-L)<NY THEN 2520
ELSE 2540
2520 TEST=1
2530 GOTO 2590
2540 IF L=13 THEN 2590
2550 NEXT L
2560 M=M+1
2570 TEST=0
2580 ON CODE GOTO 1210,1710,2100
2590 CALL SOUND(-500,-6,0)
2600 CALL VCHAR(14-L,4*L,130,2)
2610 CALL HCHAR(14-L,4*L,32,2)
2620 IF TEST=1 THEN 2560
2630 IF L=13 THEN 2560
2640 M=0
2650 HITS=HITS+1
2660 GOSUB 4090
2670 ON CODE GOTO 1470,1970,2340
2680 IF M=1 THEN 2690 ELSE 2700
2690 ON CODE GOTO 1210,1710,2100
2700 FOR L=13 TO 1 STEP-2
2710 CALL SOUND(-1000,1000,13-L,
5000,18-L,-6,18-L)
2720 CALL VCHAR(1+L,16+L,121)
2730 CALL GCHAR(L,15+L,Q)
2740 CALL GCHAR(L,16+L,R)
2750 CALL VCHAR(1+L,16+L,32)
2760 IF Q>127 THEN 2860
2770 IF R>127 THEN 2860
2780 IF (1+L)<NY THEN 2790 ELSE 2810
2790 TEST=1
2800 GOTO 2860
2810 IF L=1 THEN 2860
2820 NEXT L
2830 M=M+1
2840 TEST=0
2850 ON CODE GOTO 1210,1710,2100
2860 CALL SOUND(-500,-6,0)
2870 CALL HCHAR(1,15+L,130,2)
2880 CALL VCHAR(L,15+L,32,2)
2890 IF TEST=1 THEN 2830
2900 IF L=1 THEN 2830
2910 HITS=HITS+1
2920 GOSUB 4090
2930 M=0
2940 NET=MET+1
2950 IF MET=METFOR THEN 3420
2960 ON CODE GOTO 1470,1970,2340
2970 IF (TS=10)=(SHD=0) THEN
2980 ELSE 2990
2990 CALL SOUND(-500,1000,0)
2990 IF TS=11 THEN 1710
3000 CALL HCHAR(11,3,122,29)
3010 SHD=SHD+1
3020 IF SHD<4 THEN 1710
3030 CALL HCHAR(11,3,32,29)
3040 SHD=0
3050 GOTO 1710

```

```

1610 CALL KEY(0,K,S)
1620 CODE=2
1630 IF S=0 THEN 1710
1640 IF K=48 THEN 1650 ELSE 1660
1650 GOTO 2680
1660 IF K=49 THEN 1670 ELSE 1680
1670 GOTO 2410
1680 IF K=50 THEN 1690 ELSE 1710
1690 TS=TS+1
1700 GOTO 2970
1710 CALL VCHAR(Y,X,32)
1720 CALL GCHAR(Y+1,X,0)
1730 IF D<96 THEN 1960
1740 IF D=122 THEN 1810
1750 IF D>114 THEN 1940
1760 DEAD=DEAD+300
1770 GOSUB 4200
1780 GOSUB 4200
1790 GOSUB 4200
1800 GOTO 1840
1810 CALL VCHAR(Y+1,X,130)
1820 CALL VCHAR(Y+1,X,32)
1830 GOTO 1870
1840 CALL VCHAR(Y+1,X,130,2)
1850 CALL VCHAR(Y+1,X,32)
1860 CALL VCHAR(Y+2,X,118)
1870 CALL HCHAR(11,3,32,29)
1880 SHD=0
1890 CALL SOUND(-500,-7,0)

```



```

3040 PRINT " SITUATION— YOU ARE IN CONTROL OF YOU
R CITY DEFENCE SYSTEMS."
3070 PRINT " MISSION— TO DEFEND AGAINST A METE
OR STORM."
3080 PRINT " CONTROLS— PRESS '1' FOR LEFT SHLD/PRES
S'0' FOR RIGHT SHLD/PRESS '2' FOR SHIELD."
3090 FOR DELAY=1 TO 3000
3100 NEXT DELAY
3110 GOSUB 4050
3120 PRINT " EQUIPMENT— 1. 2-LASER CON
TROLLED NUCLEAR MISSILE SHLD (KEYS 011)."
3130 PRINT " 2. MAGNETIC SHIELD ABOVE CITY (KEY 2)."
3140 GOSUB 4050
3150 PRINT " LIMITATIONS— 1. ONLY 1 MISS
ILE CAN BE LAUNCHED AT EACH METEOR."
3160 PRINT " 2. THE SHIELD CAN BE USED (IF AVAILABLE)
FOR 10,35SEC. BURSTS(MAX)."
3170 PRINT " 3. A DIRECT HIT ON A METEOR MAY NOT ALWAYS
DESTROY IT— MISSILES ARE SET TO EXPLODE."
3180 PRINT "WEAR THE METEOR FOR MAXIMUM DESTRUCTIVE PO
WER."
3190 PRINT " 4. IF THE CITY FOUNDATIONS ARE PENETRATED
THEN ITS NUCLEAR POWER PLANT WILL EXPLODE."
3200 RETURN
3210 GOSUB 4050
3220 PRINT "SELECT LEVEL 1,2 OR 3
1:2-MODERATE STORM;1:3-HEAVY STORM."
3230 GOSUB 4050
3240 CALL KEY(0,K,S)
3250 IF S=0 THEN 3310
3260 IF K=49 THEN 3350
3270 IF K=50 THEN 3370
3280 IF K=51 THEN 3390
3290 IF K=49 THEN 3240
3300 IF K=51 THEN 3240
3310 FOR S=0 TO 30 STEP 2
3320 CALL SOUND(10,110*(S+1),S)
3330 NEXT S
3340 GOTO 3240
3350 METEOR=50
3360 GOTO 3400
3370 METEOR=100
3380 GOTO 3400
3390 METEOR=150
3400 CALL CLEAR
3410 RETURN
3420 PRINT "THE CITY IS SAFE-GOOD WORK!"
3430 CALL COLOR(8,2,1)
3440 CALL COLOR(3,2,1)
3450 CALL COLOR(4,2,1)
3460 PRINT
3470 PRINT "PEOPLE KILLED!!!";DEAD
3480 PRINT
3490 PRINT "METEORS INTERCEPTED!!!";HITS
3500 PRINT
3510 PRINT "PERCENTAGE HIT!!!";HITS*100/METEOR;"%"
3520 PRINT
3530 PRINT "PRESS 'S' TO START PRESS 'I' TO
TERMINATE"
3540 CALL KEY(0,K,S)
3550 IF S=0 THEN 3600
3560 IF K=83 THEN 40

```

```

3570 IF K=84 THEN 3980
3580 IF K=83 THEN 3540
3590 IF K=84 THEN 3540
3600 FOR S=0 TO 30 STEP 2
3610 CALL SOUND(10,110*(S+1),S)
3620 NEXT S
3630 GOTO 3540
3640 FOR R=1 TO 10
3650 CALL SOUND(100,200,R,-1,10)
3660 CALL SOUND(100,400,R,-1,10)
3670 NEXT R
3680 CALL SOUND(4000,-7,0)
3690 CALL SCREEN(5)
3700 CALL COLOR(9,2,2)
3710 FOR DELAY=1 TO 90
3720 NEXT DELAY
3730 FOR X=7 TO 10
3740 IF X=8 THEN 3800
3750 CALL COLOR(9,X,X)
3760 CALL COLOR(11,X,X)
3770 CALL COLOR(10,X,X)
3780 FOR DELAY=1 TO 90
3790 NEXT DELAY
3800 NEXT X
3810 CALL COLOR(8,16,16)
3820 CALL COLOR(9,16,16)
3830 CALL COLOR(11,16,16)
3840 CALL COLOR(10,16,16)
3850 FOR DELAY=1 TO 90
3860 NEXT DELAY
3870 CALL SCREEN(16)
3880 CALL COLOR(11,16,16)
3890 FOR T=0 TO 30 STEP 2
3900 CALL SOUND(-500,-7,T)
3910 NEXT T
3920 CALL CLEAR

```

```

3930 CALL COLOR(8,2,16)
3940 CALL COLOR(3,2,16)
3950 CALL COLOR(4,2,16)
3960 PRINT "YOUR CITY HAS
BEEN DESTROYED"
3970 GOTO 3490
3980 FOR S=0 TO 30 STEP 2
3990 CALL SOUND(-50,230-(4*S),
30-S,2300-(40*S),S)
4000 NEXT S
4010 FOR S=0 TO 30 STEP 5
4020 CALL SOUND(200,110,S)
4030 NEXT S
4040 END
4050 FOR A=0 TO 30 STEP 5
4060 CALL SOUND(-99,499,A,1924,A)
4070 NEXT A
4080 RETURN
4090 CALL GCHAR(24,27,S)
4100 IF S=57 THEN 4130
4110 CALL HCHAR(24,27,S+1)
4120 RETURN
4130 CALL GCHAR(24,26,S)
4140 CALL HCHAR(24,27,48)
4150 CALL HCHAR(24,26,S+1)
4160 IF S=57 THEN 4100
4170 RETURN
4180 CALL HCHAR(24,25,49)
4190 RETURN
4200 CALL GCHAR(24,7,DD)
4210 IF DD=57 THEN 4240
4220 CALL HCHAR(24,7,DD+1)
4230 RETURN
4240 CALL GCHAR(24,6,DD)
4250 CALL HCHAR(24,7,48)
4260 CALL HCHAR(24,6,DD+1)
4270 RETURN

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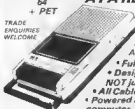
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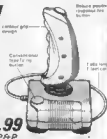
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DREAM software



GAMES EXTRA

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Amphibians Anonymous are gathering on the far bank of the River Wrap-around to honour those that didn't make it.

Frogs from across the length and breadth of Texas are homing in on the river to take part in the service to deceased omphibia

But there's a five lone

highway to cross and traffic is no respecter of froggy limbs. And no frog wants to meet his flatmate when crossing the road.

Then there's the roaring torrent known as River Wrap-around which must be crossed with the aid of a notoriously unreliable bus

service of turtles - you can wait for ages then three come at once!

The logs make things a little easier but they travel so fast it's difficult not to get carried away.

Watch out for snakes and alligators on route and hope that you get to the

bank in time not to miss the Top Toad's speech... it starts when the timer on the bottom of the screen goes down to zero.

This arcade-speed action game is played on the TI with Extended Basic.

If you play with your shift lock key up then you'll have to change line 520 from K=121 to K=88

FROGGER

```

10 CALL SCREEN 11
11 DIM A$(100)
12 FROGGER
13 EXTENDED BASIC
14 DIM A$(100)
15 REQUIRED
16 104 FOR A$=" "
17 100 DIM A$(100)
18 102 A$=" "
19 121 FOR A$=" "
20 125 CALL A$(100)
21 127 A$=" "
22 129 A$=" "
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27 139 A$=" "
28 141 A$=" "
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```



```

100 CALL LWRITE #20,124,11,30,1,
JCP,#21,130,11,49,120,0,3,CP)
200 CALL LWRITE #13,124,11,35,78
,1,CP)
300 CALL LWRITE #13,120,11,49,90
,1,3,CP,#4,134,11,65,168,0,2,CP)
400 CALL LWRITE #3,99,12,37,150,
0,5,CP)
410 CALL LWRITE #3,99,10,113,100
,1,6,CP,#6,99,12,113,50,0,6,CP)
420 CALL LWRITE #4,99,5,161,20,0
,4,CP,#7,99,12,161,100,0,4,CP)
430 CALL LWRITE #5,99,12,145,100
,0,6,CP,#3,99,12,145,50,0,6,CP)
440 CALL MOTION #1,H,J:: IF H
=0 THEN CALL MOTION #1,0,0::
CALL LOCATE #1,0,1:: GOTD 580
450 CALL SOUND 10,300,1:: IF X=0 A
ND Y=0 THEN CALL PATTERN #1,128
ELSE CALL PATTERN #1,128
460 CALL MOTION #1,-85,(Y*4),3,4
)
470 CALL SOUND ALL,5:: IF G=0 T
HEN 440 ELSE 480
480 CALL SOUND 0,5,12:: CALL
MOTION #1,0:: CALL COLOR #1,9
:: FOR S=1 TO 200:: NEXT S
490 FPG=0:: DISPLAY AT 1,12
: FPG
500 IF FPG=0 THEN 510 ELSE 530
510 CALL LWRITE ALL:: CALL C
LEAF:: IF COLOR/8,2,1:: CALL
SCREEN 1:: CALL PLAY AT 8,4:: N
D FPG=1:: TO PLAY AGAIN P
RESS Y/N
520 CALL LWRITE #1,0:: IF C=0 THE
N 530 ELSE 128 THEN RUN 135
ELSE STOP

```

```

500 CALL LOCATE #1,170,100:: CA
LL COLOR #1,4:: GOTD 440
540 FPG=FPG+1:: DISPLAY AT 1,12
: FPG:: IF I=1:: IF I=12 THEN 1
000 ELSE IF=IF+1
550 CALL MOTION #2,0,5,CP,#3,0,6
,CP,#4,1,4,CP,#6,0,6,CP,#7,0,4
,CP,#5,0,6,CP,#8,0,6,CP)
560 CALL MOTION #10,0,CP,#13,0,3
,CP,#14,0,2,CP,#18,0,2,CP,#19,0,
2,CP,#19,0,2,CP,#20,0,CP,#21,0,3
,CP)
570 FOR G=1 TO 100:: NEXT G::
CALL LOCATE #1,170,100:: CALL C
OLOR #1,1:: GOTD 440
580 CALL MOTION #1,H,J)
590 CALL SOUND 1,1,31:: IF S1=0
THEN CALL PATTERN #1,128:: GOTD
580 ELSE CALL PATTERN #1,132::
A=Y
600 FL=1:: H=H-16:: CALL LOCAT
E #1,H,J:: IF H=1 THEN CALL COL
OR #1,1:: GOTD 540
610 CALL SOUND ALL,6:: IF G=0
THEN 620 ELSE IF H=81 THEN FL=0
:: GOTD 580 ELSE FL=0:: GOTD 48
0
620 IF FL=0 THEN 580
630 IF J=CP 256 THEN FL=1:: G
OTD 480
640 ON (H/16) GOTD 654,660,670
,680,650
650 A=2*P:: CALL LOCATE #1,H,J
+CP:: CALL MOTION #1,0,A:: FL=
1:: CALL SOUND 10,300,1:: GOT
D 580
660 A=3P:: CALL LOCATE #1,H,J+3
P:: CALL MOTION #1,0,A:: FL=1
:: CALL SOUND 10,300,1:: GOTD
580
670 A=3*P:: CALL LOCATE #1,H,J
+P:: CALL MOTION #1,0,A:: FL=
1:: CALL SOUND 10,300,1:: GOT
D 580
680 A=2*P:: CALL LOCATE #1,H,J
+CP:: CALL MOTION #1,0,A:: FL=
1:: CALL SOUND 10,300,1:: GOT
D 580
1000 CALL LWRITE:: CALL CHARSET
1,10 DISPLAY AT 2,1:"YOU HAVE C
OMPLETED ALL THE SCREENS"
1,12 DISPLAY AT 4,1:"NOW TRY AG
AIN BUT DON'T KILL ANY FPGS"::
RUN 135

```



You may not be able to pass your driving test after twelve sessions with this Texaco program but it's worth typing in just for the 3D graphics.

You are seated at the wheel and your view is of the bonnet of the car seen through the windscreen. Cars are coming towards you which you have to

avoid as best you can.

The graphics are very well programmed; the cars start in the background as small blobs and get larger and more recognizable as they approach you.

Use the Z and full stop keys to move left and right respectively and see how much of the 100 mile course you can cover.

```

P=19
400 M$=
450 GOTO
460 P=1
470 M$=
480 GOTO
490 FOR
500 NEXT
510 GOTO
    
```

3D ROAD RACE

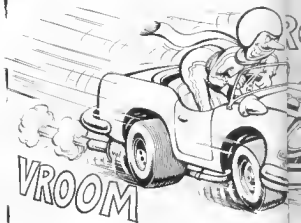
```

100 CA=
110 CAL
120 IN=
130 ON:10:
140 IF
150 E=
160 IF
170 CA=
180 P=1
190 M$=
200 GOTO
210 R=2
220 M$=
230 GOTO
240 R=4
250 M$=
260 CAR
270 GO
280 R=5
290 M$=
300 THE
310 GOTO
320 R=6
330 M$=
340 GOTO
350 P=8
360 M$=
370 GOTO
380 R=9
390 M$=
400 GOTO
410 P=11
420 M$=
430 GOTO
    
```

```

100 FOF
110 CAL
120 CA=
130 NE
140 CA=
150 CAL
160 PE
170 CA=
180 PA
190 M$=
200 CAL
210 FOF
220 CA=
230 NE
240 PEM
250 CAL
260 CAL
270 CAL
280 CAL
290 CAL
300 PEM
310 CAL
320 CAL
330 CAL
340 CAL
350 CAL
360 CAL
370 CAL
380 CAL
390 CAL
400 CAL
410 CAL
420 CAL
430 CAL
    
```





Space Dodge challenges you to get your craft back through a maze of shifting meteors to the mothership.

The object of the game is to get yourself to the home "H" marker which represents the mothership before your 35 second time limit runs out.

On the way you can pick up as many bonus points in stellar fuel as you like but don't leave it too late. Avoid the meteoric asteroids and when you conquer one phase you move onto the next.

Each phase is more difficult than the last.

TIME LIMIT

The time limit is 35 seconds and after 25, a warning will appear in the top right-hand corner of the screen. If you still fail in your quest the game stops after 35 seconds and a bell sounds.

FUEL

You start with 200 units of fuel on board the ship but it gets used up quickly. Each move costs 5 points,

smart bombs take up 40 units and Hyperspace takes up 25. On hitting a bonus, 20 units are lost but more are gained.

In indicator in the top left-hand side of the screen warns when fuel is low.

SCORING

When you eat a stellar fuel dump, a score of 10 points is notched up and you add 20 points of fuel to your reserves.

To get a bonus score you must land on a "O" and as you can only see this when you move it is difficult to add to your total in this way.

When you hit the bonus you add a random score to your total and this flashes up in the top of the screen and the same amount of fuel units is added to the tanks.

HOME

Home is randomly placed on the screen and only flashes up when you

move to make life more difficult. If you reach Home before the time limit is up then you move onto the next phase.

CONTROLS

Movement and control of the smart bomb and hyperspace features is on the keyboard. The ship can be moved up and down, left and right and diagonally. The diagonal controls are the easiest to find on the keyboard and are self explanatory as "A", "S", "Z", "X". Shift combined with the cursor keys allow up, down and left and right movement as the arrows indicate. It takes some practice to utilise these controls easily. The space bar works as a smart bomb and the "=" sign is a Hyperspace.

SMART BOMBS

You only have three smart bombs in each phase controlled by the space bar. It clears the

space around you by blowing up asteroids on every adjacent square. And hyperspace allows you to leave your present position and move to a new random position on the screen. But beware when you use it, you may land on an asteroid.

TIPS

Make sure you know where Home is at the start of the phase so you can find it quickly when time falls short. Don't aim for mammoth scores each phase but leave yourself with something in reserve to get out of trouble. It's very hard to destroy all 20 power pills in one phase, don't risk it.

As soon as you see the reversed "T" head for home. Don't over-use hyperspace it will result in a costly end. Landing on the screen border results in instant hyperspace as well.

A good score to aim for is 200 points but the author's high score is 1,255 points in five phases.

SPACE DODGE

40 200 200 10147

```

1000 1000
1001 1000
1002 1000
1003 1000
1004 1000
1005 1000
1006 1000
1007 1000
1008 1000
1009 1000
1010 1000
1011 1000
1012 1000
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1014 1000
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1016 1000
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1196 1000
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1199 1000
1200 1000

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COMPUTER & VIDEO GAMES 21

The mighty Kong has been romping through the arcades for some time - but now you can allow this not so cuddly gorilla into your own home thanks to KK addict Timothy Boone!

Tim has already written a Kong program for the Pet which we have printed but now he has adapted his interpretation of the arcade game's fourth screen - regarded as the toughest screen of all - for the Spectrum.

If you have not played the game before, you don't know what you're missing. Kong, the gruesome gorilla, has grabbed the girl and taken her to the top of the Empire State Building.

Jump-Man, so called because of his amazing jumping ability, must try to rescue her from Kong's clutches.

The game takes up the story in the attic section of the building. When you run the program you will see Kong and the captured

girl at the top of the attic. Eight plugs hold the attic's rafters in place.

Jump-Man has to try to knock out these plugs by walking or jumping over them. If you manage to knock out all eight plugs you send Kong crashing to his doom and rescue the girl.

The plugs are guarded by four deadly moving fireballs - which you must avoid at all costs and which can also burn away the top and bottom rungs of the ladders, restricting Jump-Man's movement.

For each plug removed you score 100 points. If you conquer Kong you win the bonus and the level increases by one. The program then loops and you get another chance to challenge the king sized chimp.

You start with three lives and can lose these in many ways: touching a fireball,

falling from a burnt ladder, jumping off the rafters or falling through plug holes. Do not go too close to Kong's lair - you may regret it.

The cursor keys give your walking and climbing direction. "I" will cause Jump-Man to jump left and "O" will cause him to jump right.

A high score function is included in the game. The high scorer's name being printed in the HIGH BY box during the game.

The program comes in two parts. Load part one (LOAD "GRAPHICS") and run this program. The computer will then set up the 21 User-Defined Graphics used in the game. When the program tells you to, load the game program (LOAD "KONG") and run the game. You should now see Kong holding a girl aloft and challenging: HOW HIGH

CAN YOU TRY? As in the arcade game. You should key in and run part one then SAVE it and then key in and run part two.

A and B = vertical and horizontal co-ordinates of Jump-Man
SC = score (including the bonuses BO); P = number of plugs gone (if P = 8 then the Spectrum goes into the Kong fall routine.)
F1-F4 and B1-B4 = position of fireballs; B5-B8 = the random element of the fireballs.

H5 = the name of the high scorer. L1 = lives (initially 3).
Lines 1-10 = setting up of variables. 12-14 = walk and climb sound. 100-300 = fireball movement and kill checks. 399-599 = scenery. 20-89 = main program (Jump-Man movement etc). 7000 = Jump-Man's dying routine. 7100-7300 = Kong's challenge. 7300-7700 = Kong fall and death routine. 7800-7950 = jumping subroutines. 8500-8600 = instructions.

KRAZY KONG

```

5 BORDER 6 PAPER 6 CLS PR
INT AT 10.6, FLASH 1, PLEASE WAIT
10 FOR I=144 TO 154
20 FOR J=0 TO 7 READ S: POKE
USR CHR$(I+J),Z: BEEP .005,AND+50
30 NEXT J
40 PAPER 5
50 PRINT AT 10.6,CLS: BEEP
60 PRINT "THE USER
70 PRINT "DEFINED GRAPHICS HAVE BEEN SET
80 PRINT "UP. NOW LOAD THE GAME."
90 DATA 153,90,35,60,126,255,5
100 DATA 153,90,35,60,126,255,5
110 DATA 153,90,35,60,126,255,5
120 DATA 153,90,35,60,126,255,5
130 DATA 153,90,35,60,126,255,5
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3780 DATA 153,90,35,60,126,255,5
3790 DATA 153,90,35,60,126,255,5
3800 DATA 153,90,35,60,126,2
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35 LET b=b+INKEY$="S" AND b<3
36 INKEY$="S" AND b<3
40 PRINT AT c,d,"
42 IF b=md THEN PRINT AT a,b;
INK e;"G"
44 IF b>d THEN PRINT AT a,b;
INK e;"P"
45 IF a<c THEN PRINT AT a,b;
INK e;"H"
47 IF ATTR (a+1,b)=40 AND ATTR
(a-1,b)=41 AND ATTR (a-2,b)=4
3 THEN GO TO 7000
48 IF ATTR (a+1,b)=47 THEN GO
TO 7000
53 IF ATTR (a+2,b+1)=41 OR ATT
R (a-1,b+1)=41 THEN PRINT AT a,b
+1, INK 1;"B"
55 IF ATTR (a+2,b-1)=41 OR ATT
R (a-1,b-1)=41 THEN PRINT AT a,b
-1, INK 1;"B"
60 GO SUB 15
70 IF INKEY$="0" THEN GO SUB 7
800 IF INKEY$="1" THEN GO SUB 7
900
89 LET b=b-10 GO TO 20
90 IF ATTR (a+1,b+1)=110 THEN
PRINT AT a+1,b+1, INK 7, "LET
P=a+1 LET S=c+100
91 RETURN
92 IF ATTR (a+1,b-1)=110 THEN
PRINT AT a+1,b-1, INK 7, "LET
P=a-1 LET S=c+100
93 RETURN
100 LET b5=INT (RND*3) LET b6=
INT (RND*3) LET b7=INT (RND*3):
LET b8=INT (RND*3)
120 IF b5>1 THEN LET b5=-1
130 IF b6>1 THEN LET b6=-1
140 IF b7>1 THEN LET b7=-1
150 IF b8>1 THEN LET b8=-1
160 LET b1=b1+b5 LET b2=b2+b6:
LET b3=b3+b7 LET b4=b4+b8 PRIN
T AT f1,b1+b5, PAPER 6, INK 2, F
LASH 1, E LET b1=b1+b5 IF b1,
b2 OR b1<0 THEN PRINT AT f1,b1,
"LET b1=b1-b5+2 PRINT AT f1
+1, FLASH 1, E
190 PRINT AT f2,b2+b6, "PRIN
T AT f2,b2+b6, PAPER 3, INK 7, F
LASH 1, E LET b2=b2+b6 IF b2,
b3 OR b2<4 THEN PRINT AT f2,b2,
"LET b2=b2-b6+2 PRINT AT f2,
b2, FLASH 1, E
210 PRINT AT f3,b3+b7, "PRIN
T AT f3,b3+b7, PAPER 3, INK 0, F
LASH 1, E LET b3=b3+b7 IF b3,
b4 OR b3<3 THEN PRINT AT f3,b3,
"LET b3=b3-b7+2 PRINT AT f3,
b3, FLASH 1, E
230 PRINT AT f4,b1+b8, "PRIN
T AT f4,b4+b8, PAPER 6, INK 4, F
LASH 1, E LET b4=b4+b8 IF b4,
b5 OR b4<3 THEN PRINT AT f4,b4,
"LET b4=b4-b8+2 PRINT AT f4,
b4, FLASH 1, E
300 IF ATTR (a,b+1)=120 OR ATTR
(a,b-1)=120 OR ATTR (a+1,b)=120
OR ATTR (a-1,b)=120 THEN GO TO
7000
350 RETURN
395 BORDER 9, PAPER 9, CLS, PR
INT AT 1,16, INK 6, "KL" AT 1,16,
INK 6, "MN" AT 1,15, INK 6, "A" A
T 1,13, INK 6, "S" AT 5,13, I
NK 6, "B" AT 5,13, INK 6, "BRS"
AT 5,13, INK 6, "B" AT 5,14, INK 6,
"AT 5,17, INK 6, "AT 5,13,
INK 6, "AT 5,13, INK 6, "AT 5
1,17,
400 PRINT AT a,e, INK n,"
"AT a,16, INK n,"
"AT a,1, INK n,"
"INK S," INK S," INK n,"C";
C INK S, INK S, INK n, C C

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3093,0: "AT 3096,0: "AT 3099,0: "AT 3102,0: "AT 3105,0: "AT 3108,0: "AT 3111,0: "AT 3114,0: "AT 3117,0: "AT 3120,0: "AT 3123,0: "AT 3126,0: "AT 3129,0: "AT 3132,0: "AT 3135,0: "AT 3138,0: "AT 3141,0: "AT 3144,0: "AT 3147,0: "AT 3150,0: "AT 3153,0: "AT 3156,0: "AT 3159,0: "AT 3162,0: "AT 3165,0: "AT 3168,0: "AT 3171,0: "AT 3174,0: "AT 3177,0: "AT 3180,0: "AT 3183,0: "AT 3186,0: "AT 3189,0: "AT 3192,0: "AT 3195,0: "AT 3198,0: "AT 3201,0: "AT 3204,0: "AT 3207,0: "AT 3210,0: "AT 3213,0: "AT 3216,0: "AT 3219,0: "AT 3222,0: "AT 3225,0: "AT 3228,0: "AT 3231,0: "AT 3234,0: "AT 3237,0: "AT 3240,0: "AT 3243,0: "AT 3246,0: "AT 3249,0: "AT 3252,0: "AT 3255,0: "AT 3258,0: "AT 3261,0: "AT 3264,0: "AT 3267,0: "AT 3270,0: "AT 3273,0: "AT 3276,0: "AT 3279,0: "AT 3282,0: "AT 3285,0: "AT 3288,0: "AT 3291,0: "AT 3294,0: "AT 3297,0: "AT 3300,0: "AT 3303,0: "AT 3306,0: "AT 3309,0: "AT 3312,0: "AT 3315,0: "AT 3318,0: "AT 3321,0: "AT 3324,0: "AT 3327,0: "AT 3330,0: "AT 3333,0: "AT 3336,0: "AT 3339,0: "AT 3342,0: "AT 3345,0: "AT 3348,0: "AT 3351,0: "AT 3354,0: "AT 3357,0: "AT 3360,0: "AT 3363,0: "AT 3366,0: "AT 3369,0: "AT 3372,0: "AT 3375,0: "AT 3378,0: "AT 3381,0: "AT 3384,0: "AT 3387,0: "AT 3390,0: "AT 3393,0: "AT 3396,0: "AT 3399,0: "AT 3402,0: "AT 3405,0: "AT 3408,0: "AT 3411,0: "AT 3414,0
```



```

7130 FOR i=1 TO VAL "150": PRINT
  AT a,b, INK i;"0", NEXT i: LET
  i=i-1: IF i>=0 THEN GO TO VAL "
7132 PRINT AT a,b, INK 1;"0", VAL "11":
  "GAME OVER" INPUT INK 1;"HIT (E
  YTER) TO PLAY AGAIN.-"K: IF
  C)hi THEN LET hi=sc: GO TO VAL "
7050"
7035 GO TO r
7135 PRINT AT VAL "0", VAL "
  "6": "CONGRATULATIONS-YOU ARE" AT
  VAL "10", f: "TODAY'S HIGH SCORER
  I PLEASE" AT VAL "12", f: "ENTER
  YOUR NAME" 3 LETTERS: FOR x=1
  TO 3: BEEP VAL "1", RND%3:
  AL "40": NEXT INPUT hi: LET H
  =H:(1 TO 3): GO TO r
7110 BORDER 4: PAPER 4: CLS: PA
  INT AT 8,15: INK 2: KL AT 9,15:
  INK 1: AT 10,14: INK 6: A: AT 11,
  4: INK 0: DPO: AT 13,14: ST: AT
  6,13: "KRAZY" AT 14,13: "KONG!"
  PRINT 41: "HOU HIGH CAN YOU
  T"
7130 BEEP .4: .5 PAUSE 3: BEEP .
  2: .3 BEEP .3: .3 PAUSE 3: BEEP .
  2: .3 PAUSE 2: BEEP .2: .0 PAUSE
  2 BEEP .3: .3 PAUSE 4: BEEP 1,
  3
7140 PAUSE 250: GO TO 4
7302 PRINT AT a,b, PAPER 9, " "
7305 FOR y=t TO 16: PRINT AT y,b
  17 TO 20: PRINT AT y,d, INK n
  "CCCCCCCCCCCC" NEXT y:
7310 LET y=s: LET x=15: PRINT AT
  y,x-t: "000" AT y+t, x-t: "AST"
7315 FOR a=t TO VAL "10": PRINT
  AT y+t,x+t: "AT y+t,x-t: BEEP .4
  VAL "005" AT y+t,x-t: "0" AT
  y,x-t: "A" AT y+t,x+t: "AT y+t
  x-t: "A" BEEP VAL "1", s=VAL "1
  0" NEXT s
7320 FOR s=t TO VAL "11": PRINT
  AT y,x-t: "DSU" AT y+t, x-t: "DSU"
  LET y=y+t: PRINT AT y-r, x-t:
  "BEEP VAL "2", s: NEXT s: BE
  EP .1: VAL "15"
7330 PRINT AT a,b, INK n, "
  LET a=8: FOR b=0 TO 14: PRINT AT
  a,b, "F" PRINT AT a,b-1, " " GO
  SUB 12: NEXT b
7340 PAUSE 100: PRINT AT 13,12: "
  YOU WIN" PAUSE 100: PRINT AT 13
  11: "THIS TIME" PAUSE 100: PRIN
  T AT 13,8, FLASH t: "NOW TRY AGAI
  N"
7350 PAUSE 500: LET sc=sc+bo: LE
  T t=le+t: GO TO n
7820 IF b>27 THEN RETURN
7825 IF ATTA (a+t,b)=w THEN PRIN
  T AT a+t,b, INK S, " " LET p=p+t
  LET t=t+1
7830 BEEP .1,15: LET a=a-t: LET
  b=b+t: PRINT AT a+t,b-t, " " PRI
  V AT a,b, INK e, "I": BEEP .1,20
  IF ATTA (a+r,b)=w THEN PRINT A
  T a+r,b, INK S, " " LET p=p+t: L
  ET sc=sc+100
7835 IF ATTA (a,b-t)=0 OR ATTA (
  a+r,b-t)=0 THEN PRINT AT a+t,b-t
  , INK t, "E"
7840 LET b=b+t: PRINT AT a,b-t, "
  " PRINT AT a,b, INK e, "I": BEE
  P .1,25: IF ATTA (a+r,b)=w THEN
  PRINT AT a+r,b, INK S, " " LET p
  =p+t: LET sc=sc+100
  IF ATTA (a,b-t)=0 AND ATTA
  A (a+r,b-t)=0 THEN PRINT AT a,b
  -t, INK t, "B"
7850 LET a=a+t: LET b=b+t: PRINT
  AT a+t,b: BEEP .1,15
  IF ATTA (a,b)=0 AND ATTA
  A (a,b)=0 THEN PRINT AT a,b, INK
  t, "E"

```

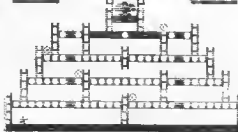
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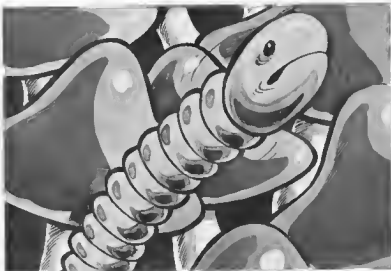
1+ b=1) GO THEN PRINT AT b-1,b
    INK 1;"B"
7855 IF a=b AND a=f1 OR b=b2 AN
a=f2 JR b=b3 AND a=f3 OR b=b4
AND a=f4 THEN GO TO 7900
7860 IF a=1 AND b=2 OR a=11 AN
d=26 a=a AND b=24 HSHL GO T
D 7000
7895 GO TO 20
7910 IF b=1 THEN RETURN
7915 IF ATTRA(a,t),b THEN PRIN
T AT a+t,b; INK S;" " LET p=p+1
LET SC=c+100
7930 BEEP .1 IS LET a=a-t LET
b=b-t PRINT AT a+t,b;t BEEP .1
NT a; INK e;" " BEEP .1
IF ATTRA(a+f,b)=w THEN PRINT A
T a+f,b; INK S;" " LET p=p+1 L
ET SC=c+100
7950 IF ATTRA(a+b,t),c OF ATTRA(
a+t,b,t)=0 THEN PRINT AT a+t,b;t
; INK l;"B"
7940 LET b=b-1 PRINT AT a,b,t;
P;" " PRINT AT a,b, INK e;"J" BEE
P .1
7920 IF ATTRA(a,t),b THEN
PRINT AT a+f,b; INK S;" " LET p
=p+1 LET SC=c+100
7945 IF ATTRA(a+t,b+t)=0 AND ATT
A(a+f,b,t)=0 THEN PRINT AT a,b,
t;b
7950 LET a=a+t LET b=b-t PRINT
AT a=t,b;t;" " PRINT AT a,b, I
NK e;"G" BEEP .1
7955 IF ATTRA(a+b,t)=0 AND ATTRA
(a+f,b+t)=0 THEN PRINT AT a+t,b
+t, INK l;"B"
7955 IF b=b1 AND a=f1 OR b=b2 AN
D a=f2 JR b=b3 AND a=f3 OR b=b4
AND a=f4 THEN GO TO 7900
7960 IF a=14 AND b/c OR a=11 AND
b/c OR a=8 AND b/m THEN GO TO 7
900
7990 GO TO 20
8500 PAPER VAL "2". BORDER PI-PI
; INK VAL "7". CLS
8510 PRINT AT PI*PI,VAL "10"."KR
BYZ KONG";AT VAL "21",VAL "10"."
TIM BOONE,Southeast;INT PI,"by
8550 PRINT,AT VAL "5",VAL "7","K
EYBOARD COMMANDS.";AT VAL "7",PI
PI,"CURSOR KEYS GIVE WALK DIREC
TION";AT VAL "8",VAL "5"."U
MP LEFT";AT VAL "11",VAL "6"."O
= JUMP RIGHT"
8552 PRINT AT 15,0;"YOU SCORE 10
FOR EACH KEY YOU KNOCK OUT."
AND SIN HE BONUS IF YOU CONQUER
KONG.";AT 21,3, BRIGHT 1;"PRESS
ANY KEY TO PLAY.." IF INKEY=""
THEN GO TO VAL "8552"
8560 INK 0; RETURN
8600 STOP

```

SCORE: 0 HIGH: 0 LEVEL: 0

A photograph of a circuit board with a digital display showing 'HIGH' and '0.0'.





WORM CHASE

Baffled, bothered, bewildered? Then you must be trapped in the 3D Labyrinth. Even more puzzling than the Hampton Court maze, more difficult to get out of than the Barbican centre and more addictive than Dallas, this game has everything -

except clues on how to escape!

At the start of the game you are asked to select the size of the maze. It is always organised so that one exit is at the top left on the map which you can call up for advice. You start at the bottom right.

Screen presentation is simple but effective. The maze is always displayed from the back of the cell you are in - and you can see up to a maximum of four cells in front. You'll soon get the hang of the graphic display and be

ready to tackle the mysteries of the maze.

Commands used are:
F = forward one cell. R = right 90 degrees, staying in the same cell. L = left 90 degrees etc. H = Help! Returns you to the map of the maze showing your position.

3D LABYRINTH

```

5 FLASH 0. BRIGHT 0. OVER 0.
INVERSE 0. BORDER 0. PAPER 2. IN
"0 CLS PRINT AT 7,7:"3-D LAB
"YRINTH",RT 9,10:"1982 - M.BERTON

7 FOR i=0 TO 7: POKE USR "a"+
1,2+i. POKE USR "b"+1,2+(7-i). P
OKE USR "c"+1,1. POKE USR "d"+1,
1. POKE USR "e"+1,0. POKE USR "f"+
7,15. POKE USR "g"+1,252. PO
KE USR "h"+1,0. POKE USR "i"+1,6
3. POKE USR "j"+1,240. POKE USR
"K"+1,129. POKE USR "L"+1,240. P
OKE USR "M"+1,207. NEXT i
Poke USR "a"+7,255. POKE USR "
b"+7,255. POKE USR "h"+255. P
OKE USR "i"+7,255. POKE USR "K"
,120. POKE USR "L"+7,120
15 DIM a(11,16). DIM b(11,16)
16 LET b=0
17 LET c=0
18 INPUT "Length (2-16)?" U: LE
T U=INT U. IF U<2 OR U>16 THEN G
O TO 17
19 INPUT "Width (2-11)?" V: LET
t=INT V. IF t<2 OR t>11 THEN GO
TO 19
20 CLS. PRINT AT 0,1:"PLEASE
"WAIT WHILE I CREATE THE",TRB 11,
"LABYRINTH"
21 RANDOMIZE : LET x=INT (t/2)
22 LET y=INT (U/2). LET a(x,y)=5
23 LET b=0. IF x<t THEN IF a(x
+1,y)=0 THEN LET b=b+1. LET a(b)
=1
24 IF x>1 THEN IF a(x-1,y)=0 T
HEN LET b=b+1. LET a(b)=1
25 IF y<U THEN IF a(x,y+1)=0 T
HEN LET b=b+1. LET a(b)=1
26 IF y>1 THEN IF a(x,y-1)=0 T
HEN LET b=b+1. LET a(b)=1
27 IF x<2 OR x>t OR y<2 OR y>U
190 LET b=a(x,y). GO SUB 2000.
LET x1=x. LET y1=y
200 IF x1=0 AND y1=0 THEN GO TO
240
210 LET x=x+x1. LET y=y+y1. GO
TO 210
220 LET b=a(INT (tRND*b)+1). GO
SUB 2000
230 LET x=x+x1. LET y=y+y1. LET
a(x,y)=b. GO TO 210
240 LET L=t+1. LET M=u+1. LET x
=t. LET y=u. LET x2=-1. LET y2=0
250 BORDER 1. PAPER 4 CLS GO SU
B 4000
260 PRINT AT 1,11:"GOOD LUCK!",
AT 18,10:"PRESS ANY KEY": PRUSE
0
270 CLS. INK 1. FOR i=0 TO 21
PRINT RT i,31:INK 1. NEXT i. INK
0
280 IF x2=0 THEN GO TO 750
290 LET x=x+x2:3: LET y=y+y2: L
ET z=y-x2
300 FOR i=x TO q STEP x2. LET s
=4-(z-y)/y2: GO SUB 3100
310 LET w=i+y2
320 LET b=a(x,i). GO SUB 2000.
IF x1=y2 OR (y2=1 RND x=1 AND i=
1) THEN LET a=1
330 IF y>0 AND y<t THEN LET b=a
(y,y). GO SUB 2000. IF x1=y2 TH
EN LET a=1
340 GO SUB 2100. IF a=0 THEN GO
SUB 2700. GO TO 330
350 LET a=0: IF w>0 RND w<t RND
y>0 AND y<t THEN LET b=a(w,y).
GO SUB 2000. IF y1=y2 THEN LET a
=1
360 IF v>0 AND v<t THEN LET b=a

```

```

420 LET w=i+x2
430 LET b=a(1,y). GO SUB 2000.
IF y1=x2 THEN LET a=1
440 IF v>0 AND v<t THEN LET b=a
(1,y). GO SUB 2000. IF y1=x2 TH
EN LET a=1
450 GO SUB 2100. IF a=0 THEN GO
SUB 2700. GO TO 330
460 LET a=0: IF w>0 AND w<t RND
y>0 AND y<t THEN LET b=a(w,y).
GO SUB 2000. IF x1=x2 THEN LET a
=1
470 IF v>0 AND v<t THEN LET b=a
(1,y). GO SUB 2000. IF x1=x2 TH
EN LET a=1
480 IF v>0 AND v<t THEN LET b=a
(1,y). GO SUB 2000. IF x1=x2 TH
EN LET a=1
490 IF v>0 AND v<t THEN LET b=a
(1,y). GO SUB 2000. IF x1=x2 TH
EN LET a=1
500 GO SUB 2300. GO TO 330
510 GO SUB 2500
520 LET a=0: LET b=a(1,y). GO S
UB 2000. IF y1=x2 THEN LET a=1
530 IF z>0 AND z<t THEN LET b=a
(1,z). GO SUB 2000. IF y1=x2 TH
EN LET a=1
540 GO SUB 2200
550 LET a=0 THEN GO SUB 2800. GO
TO 700
560 LET a=0. IF w>0 RND w<t RND
z>0 AND z<t THEN LET b=a(w,z).
GO SUB 2000. IF x1=x2 THEN LET a
=1
570 IF z>0 AND z<t THEN LET b=a
(1,z). GO SUB 2000. IF x1=x2 TH
EN LET a=1
580 IF a=1 THEN GO TO 680
590 GO SUB 2400. GO TO 700
600 GO SUB 2600
610 GO SUB 3000
620 LET a=0: IF w>0 RND w<t TH
EN LET b=a(w,y). GO SUB 2000. IF
x1=x2 THEN LET a=1
630 LET b=a(1,y). GO SUB 2000:
IF x1=x2 THEN LET a=1
640 IF w>0 RND w<t RND a=1 THEN
NEXT i
650 IF (x2=1 AND i<=q) OR (x2=
1 AND i>=q) AND i<=1 OR y>1) T
HEN GO SUB 2900
660 GO TO 1103
670 LET a=y+y2+3. LET v=x-y2. L
ET z=x+y2
680 FOR i=y TO q STEP y2. LET s
=4-(z-y)/y2: GO SUB 3100
690 LET w=i+y2
700 LET b=a(x,i). GO SUB 2000.
IF x1=y2 OR (y2=1 RND x=1 AND i=
1) THEN LET a=1
710 IF y>0 AND y<t THEN LET b=a
(y,y). GO SUB 2000. IF x1=y2 TH
EN LET a=1
720 GO SUB 2100. IF a=0 THEN GO
SUB 2700. GO TO 330
730 LET a=0: IF w>0 RND w<t RND
y>0 AND y<t THEN LET b=a(w,y).
GO SUB 2000. IF y1=y2 THEN LET a
=1
740 IF v>0 AND v<t THEN LET b=a

```



```

14,1): GO SUB 2000. IF y1=-y2 TH
EN LET a=1
870 IF a=1 THEN GO TO 900
880 GO SUB 2300 GO TO 930
900 GO SUB 2500
930 LET a=0 LET b=m(x,y). GO S
UB 2000 IF x1=-y2 OR (y2=-1 AND
x=1 AND 1=1) THEN LET a=1
950 IF z>0 AND z<1 THEN LET b=m
(z,y) GO SUB 2000 IF x1=y2 THE
N LET a=1
980 GO SUB 2200
970 IF a=0 THEN GO SUB 2500 GO
TO 1050
990 LET a=0 IF w>0 AND w<m AND
z>0 AND z<1 THEN LET b=m(z,w).
GO SUB 2000 IF y1=y2 THEN LET a
=1
1000 IF z>0 AND z<1 THEN LET b=m
(z,y). GO SUB 2000 IF y1=-y2 TH
EN LET a=1
1010 IF a=1 THEN GO TO 1040
1020 GO SUB 2400 GO TO 1050
1040 GO SUB 2600
1050 GO SUB 3000
1070 LET a=0 IF w>0 AND w<m THE
N LET b=m(x,w). GO SUB 2000 IF
y1=y2 THEN LET a=1
1080 LET b=m(x,y). GO SUB 2000:
IF y1=-y2 THEN LET a=1
1090 IF w>0 AND w<m AND a=1 THEN
NEXT J
1100 IF (y2=-1 AND 1=y1 OR (y2=-
1 AND 1=y1) THEN GO SUB 2900
1101 IF x>1 OR y>1 THEN GO TO
1107
1102 IF x2=-1 THEN PRINT AT 0,13
"EXIT"; AT 1,12;"EXIT"
1103 IF y2=-1 THEN PRINT AT 5,26
"OUT"
1107 IF x=t AND y=v THEN PRINT A
T 7,5;"YOU ARE AT THE START"
1110 RESTORE FOR i=1 TO 4 REA
D x1,y1 x1=x2 AND y1=y2 THEN
GO TO 1130
1120 NEXT J
1130 INPUT "What is your move ?"
1135 GO TO 1140
1135 INPUT "Left,Right,Forward o
r Back?";i$
1140 IF i$="r" OR i$="A" THEN LE
T i=1+1 GO TO 1120
1150 IF i$="l" OR i$="L" THEN LE
T i=1-1 GO TO 1120
1160 IF i$="f" OR i$="H" THEN GO
SUB 4000 GO TO 1130
1170 IF i$="b" OR i$="B" THEN GO
TO 1320
1180 GO TO 1135
1190 IF i=5 THEN LET i=1
1200 IF i=0 THEN LET i=4
1200 RESTORE FOR i=1 TO 4. REA
D x2,y2 NEXT i
1210 GO TO 370
1220 LET x=x+x2. LET y=y+y2
1230 IF x<1 OR y<1 THEN GO TO 6
800
1240 IF x<1 OR x>t OR y<1 OR y>v
THEN GO TO 1430
1250 LET b=0
1260 IF y2=0 THEN GO TO 1400
1270 LET b=m(x,y). GO SUB 2000.
IF y1=y2 THEN LET a=1
1280 LET b=m(x,y2). GO SUB 200
0 IF y1=-y2 THEN LET a=1
1290 GO TO 1420
1300 LET b=m(x,y). GO SUB 2000.
IF x1=x2 THEN LET a=1
1310 LET b=m(x2,y). GO SUB 200
0 IF x1=-x2 THEN LET a=1
1320 IF a=1 THEN GO TO 370
1330 LET a=x-x2. LET y=y-y2
1340 PRINT AT 7,4;"YOU CAN'T MOV
E THIS WAY"
1450 GO TO 1130

```

```

2000 LET x1=0. LET y1=0
2005 IF b=1 THEN LET x1=1
2010 IF b=2 THEN LET x1=-1
2020 IF b=3 THEN LET y1=1
2030 IF b=4 THEN LET y1=-1
2040 RETURN
2100 FOR j=c TO d
2110 PRINT AT 21-j,j;" " IF a=0
AND j>-1 THEN PRINT AT j-9,j;"
"
2120 NEXT j: RETURN
2200 FOR j=c TO d
2210 PRINT AT 21-j,30-j;" " IF
a=0 AND j>-9 THEN PRINT AT j-9
,j;" "
2220 NEXT j: RETURN
2300 LET a=d-c. FOR k=e TO f: PA
INT AT k,c;b$( TO n); NEXT k
: RETURN
2400 LET a=30-d: LET p=d-c. FOR
k=e TO f: PRINT AT k,n;" " b$( TO
n); NEXT k: RETURN
2500 PRINT AT f,c;" " 18-d
+c TO j. FOR j=e TO f-1: PRINT A
T j,d;" " NEXT j
2610 IF d-c>0 THEN LET j=20-(d-
c)/2+d-1 LET n=d-c: FOR k=11-j
TO j: PRINT AT k,c;b$( TO n);
NEXT k
2520 RETURN
2600 LET a=30-d: PRINT AT f,p;" "
2610 LET j=30-d+1: FOR j=e TO
f-1: PRINT AT j,p;" " NEXT j
2610 IF d-c>0 THEN LET j=20-(d-
c)/2+d-1 LET n=d-c: FOR k=11-j
TO j: PRINT AT k,p;" " b$( TO n
); NEXT k
2620 RETURN
2700 FOR j=e TO f: PRINT AT j,d,
" " NEXT j: RETURN
2800 LET r=30-d: FOR j=e TO f: P
RINT AT j,r-1: NEXT j: RETURN
2900 LET a=d-c: LET p=29-d+r: FO
R k=e TO f: PRINT AT k,n,b$( TO
p); NEXT k: RETURN
3000 PRINT AT f+1,d+1,c$ TO 29-
d+r;
3100 LET a=0. LET c=15-2+s. LE
T d=15-2+(s-1)-1
3110 LET i=20-d: LET e=0. IF d=0
-1 THEN LET e=d-B
3120 RETURN
4000 CLS LET r=9-INT (1/2) LE
T i=15-INT (U/2)
4005 FOR k=1+r TO t+r: PRINT AT
k,p;" " AT k,u+1+p;" " NEXT k
FOR k=1+p TO u+p: PRINT AT k,k;"
" AT u+1+r,k;" " NEXT k
4010 OVER 1. FOR k=1 TO t. FOR j
=1 TO u
4020 LET b=m(k,j). GO SUB 2000
4025 LET a=k+r: LET h=j+p
4027 PRINT AT a,h;" "
4030 IF x1=1 THEN PRINT AT a,h;"
" AT a-1,h;" "
4040 IF x1=-1 THEN PRINT AT a,h;"
" AT a+1,h;" "
4050 IF y1=1 THEN PRINT AT a,h;"
" AT a,h-1;" "
4060 IF y1=-1 THEN PRINT AT a,h;"
" AT a,h+1;" "
4070 NEXT j: NEXT k
4090 IF x2=1 THEN LET i$="v"
4100 IF x2=-1 THEN LET i$="t"
4110 IF y2=1 THEN LET i$="h"
4120 IF y2=-1 THEN LET i$="b"
4130 PRINT FLASH 1,AT x+r,y+p,i$
: FLASH 0,AT 1+r,1+p;" " OVER 0
: PRINT AT r,1+p;" "
4140 RETURN
5000 DATA 1,0,0,-1,-1,0,0,1
6000 BORDER 3, PAPER 5: CLS. PR
INT AT 7,3;"YOU HAVE ESCAPED FRO
M THE";TAB 11;"LABYRINTH". FOR i
=1 TO 400: NEXT i: RUN

```


It's a very addictive version of this classic game, making good use of sound and colour graphics. Full instructions are included in the program.



BOMBER ATTACK

```

459 Y=RDND(3)*
460 COLORX,1,1,LINE(N1,M1)-(RNDX,CBS5)*,RNDX(190)*,PSET
470 PLAY'T255050BIC'
480 NEXTT
490
500 LLS=PRINT'HARD LUCK YOU CAME'
510 PLAY'T402L04,00C4L6FLSEEDCGL20'
520 PRINT'YOU MANAGED TO SCORE /SC/ POINTS'
530 IF SC=N1 THEN M1=SC
540 PRINT'HIGH SCORE /M1/ POINTS'
550 PRINT'ANOTHER GO /Y/N?'
560 B=N1NEXTV IF#0 THEN GOTO58
570 IF#0 Y=N THEN GOTO58 ELSE POK55494.0 END
570 'XDRIPPING OF BOMB & CONTINUED
MOVEMENT OF PLANE#
580 PSET(N1,3) GAO,Q1=Q1+7,IFQ1190
590 THENN+7,Q1=M1+1 RETURN ELSEIFPPOIN(Q1,
70) THENN+7,Q1=M1 GOTO58 ELSE PSET(Q1,2)
600 C=RDND(3)*1,LINE(N1,M1)-(N+7,M+7),PSET,M1
610 N=N+7 M1=M1+7 IFN1252 THENN+0 M1=M1+7,
M1=M1+7 IFN#0THEN560
610 IFPPOIN(N1,M1)>37THEN GOTO448
620 PUT(N1,M1),B,PSET
630 PLAY'T2550460IC'
640 FORV=1TOS0 NEXTK
650 GOTO500
660 LINE(240,M-7)-(255,M1-7) PSET,B,GOTO68
670 PAND(RNDX)*,FORT=190
680 Q1=Q1+7,IFQ1190 THENQ1=190
690 COL=1+RDND(3)*,LINE(N1,M1)-(Q3,Q1),PSET,B
700 IFQ1190 THENRETURN
710 COLOR3,1,LINE(N,M)-(N+7,M+7),PSET,B
720 N=N+7,M=M1+7 M1=M1+7 IFN1252 THENN+0
730
740 PRINT'CONGRATULATIONS YOU MANAGED TO LAND'
750 IFN#0THEN500
760 PUT(N1,M1),C1,M1,37THENGOTO448
770 PLAY'T255010G
780 FORV=1TOS0 NEXTK
790 NEXTT
800 RETURN
810
820 LINE(240,M-7)-(255,M1-7) PSET,B,GOTO28
830 CLS:PRINT'CONGRATULATIONS YOU MANAGED TO LAND'
840 PRINT'ITS GOING TO GET HARDER NOW'
850 PLAY'T100308GGGGGGGGGG'
860 SC=SC+RND(10)
870
880 G51,GOTO10

```


ATOM

It was just one of those days. Nothing about it on the breakfast-time weather bulletins of course, but I looked up at midday and the skies were black with alien postmen all ready to deliver.

Well it looked as though some huge galactic sorting office in the sky had only just discovered Earth and we had several sons of backpost as yet undelivered - and they were about to put things right.

Laser bases are of little use when the skies are full of cartons from mail-order firms.

Luckily a new idea, just shown on *Tomorrow's World*, for a mobile black hole which can cope with three on any well-known breakfast cereal, looks like coming to mankind's rescue.

In this game for the Atom you must thwart their plans and prevent the boxes from landing. If you fail to do so they will gradually grow into piles until one reaches the top of the screen. Once you allow this to happen you might as well pack up and go home for the game is over.

Your only means of defence is a mobile Black Hole that will eat anything. This is moved from left to right by means of the Shift and Repeat keys. Should you collide with a Box side or hit a Pile, your hole is moved upwards thereby limiting your ability to stop the falling Boxes.

For those who like experimenting, the sound effects can be altered by poking different values into #81.



GROW

```
1REM MARKUS JAKOBSSON
2REM ILSTORR 5 57
3REM S-24821 L~DDEK~P~NGE
4REM SWEDEN
5P.#12" GROW""LEFT -
SHIFT""RIGHT - REPT""
7IN,"LEVEL 1-5"U,IFU?50RUK1;
R.#11,LI, #FE22;G,7
9U#5-U
10DIMRR4,P-1;L=#802;P.#21;E
20 RR0 LDAL;LDY#81
30 RR1 LDX#90
40 RR2 DEX;BNERR2
50OR04;STAL;DEY;BNERP1,RTS;J,P,#6
600=0
70P.#12,F,I=#0TQ31;I?#81E0=#FF;N,;
A=15;B=12;C=0,B,0=0
80F=A,R, %32;G=A,R, %200,G=-G,N=A,R, %90+G+30
90?#E1=0,R," 0"G
200GOS .a,C=C-1,GOS,d
202IFU=5,G,210
204F,I=1TOU,WRIT,N,
210F,I=1TOU;GOS,.a-N,
290G,200
300A=D?#8000=32,D?#8001=32
305IF?#8001%#80=0,GOS,b
310IF?#8002%#40=0,GOS,c
3150=A+(B*32),D?#8000=76;D?#8001=76
320R,
```

```
330bD=A-1+(B*32),IFD?#8000=32A,R>0,A=A-1,R,
340IFC<0A,R>4,B=B-1,C=10;J=10;K=20,M=3,G,e
345R,
350cD=A+2+(B*32),IFD?#8000=32A,R<30,A=A+1,R,
360G,340
370eF,I=J TO K S,M,?#80=1,LI,RR0,N,;GOS,.a,R,
380dF?#8000=32,N?#8000=32
381G?#8000=32
382IFF?#8020=255;F?#8000=255,GOS,f;G,k
383IFF?#8020=76,F=A,R, %32;GOS,g
384IFG?#8020=255,G?#8000=255,GOS,f,G,l
385IFG?#8020=76;G=A,R, %32,GOS,g
386IFN?#8020=255,N?#8000=255,GOS,f,G,n
387IFN?#8020=76;N=A,R, %32;GOS,g
390P=F+32;G=G+32,N=N+32
400F?#8000=79,G?#8000=79;N?#8000=79
410GOS,a
490R,
500FJ=1,K=3;M=1,G,e
510G0=0+1,J=9;K=-39,M=-10;P.#30;0;G,e
520hJ=50;K=-50,M=-1;GOS,e,IF0>Q;Q=0,P,Q
525J=-10;K=10,M=1
530LI, #FFE3;GOS,e,G,70
540kIFF<97;G,h
550F=A,R, %32;G,383
5601IFG<97;G,h
570G=A,R, %32,G,385
580N=IFN<97;G,h
590N=A,R, %32;G,387
```


No games supplement would be complete without that little denizen of the mazes. So here he is - renamed and revamped for the Sharp MZ80k!

Guide your little Muncher around his maze home eating up points and the Munchers favourite snack called "Gulps". These "Gulps" are extremely important as they guard you against the attentions of those nasty ghosts which also haunt the corridors of the maze.

If you manage to gobble down 20 "Gulps" the ghost which is chasing you will turn white with fear and runs away. If you catch and eat the ghost while he is in this fear-stricken state the score is given and you get a new restocked maze.

Avoiding the ghost is a difficult task and there are several surprise features built into this program should you manage to chalk up a high score - which are best left for you

to find out! At the end of each game the top ten scores are displayed.

To move your little Muncher around use the W, A, D and X keys as in many MZ80k games.

If you find the game too difficult then a useful tip is to change the value of the variable P9 in line 420 which specifies the number of "Gulps" that must be munched before the ghost turns white.

The author has managed a high score of 258,000 - so that's the target for all you maze fans out there!

Variables.
206, 207 - different ghosts.
46 - fullstop. 202 - man.
208 - grey walls
191 - "Gulps". PEEK (17828) - address contains ASC code of key pressed in GET routine. 53248 - screen address (TOP LEFT).

The author says that conversion to a Pet is easy using the above variables.

MUNCHERS

```

1000 1016
1001 MFCU
1002 MFCU "L0AGUFEDKDR. 2
1003 DIMG(4), D(4), E(4), HS(10), N$(10)
1004 G(1)=5, 7:G(2)=5, 3:G(3)=4:G(4)=4:G(5)=4:G(6)=4:G(7)=4:G(8)=4:G(9)=4:G(10)=4
1005 FURN=1:U4=D(N):D(N)=D(N):NEXN
1006 D=1
1007 PRINT "Press Any key or F to end."
1008 GETA$:IFA$="E" THENPRINT "Thank you."
1009 IFA$="" THEN32
1010 A1$="A":A2$="D":A3$="W":A4$="X"
1011 PRINT "USE DIFFERENT KEYS"
1012 GETA$:IFA$="" THEN92
1013 IFA$="N" THEN98
1014 INPUT "WEST KEY? ";A1$
1015 INPUT "EAST KEY? ";A2$
1016 INPUT "NORTH KEY? ";A3$
1017 INPUT "SOUTH KEY? ";A4$
1018 A=ASC(A1$):B=ASC(A2$):C=ASC(A3$):D=ASC(A4$)
1019 PRINT "MUNCHERS"
1020 GETA$:IF A$="" THEN120
1021 REM *** DRAW MAZE ***
1022 PRINT "G"
1023 PRINT " "
1024 PRINT " "
1025 PRINT " "
1026 PRINT " "
1027 PRINT " "
1028 PRINT " "
1029 PRINT " "
1030 PRINT " "
1031 PRINT " "
1032 PRINT " "
1033 PRINT " "
1034 PRINT " "
1035 PRINT " "
1036 PRINT " "
1037 PRINT " "
1038 PRINT " "
1039 PRINT " "
1040 PRINT " "
1041 PRINT " "
1042 PRINT " "
1043 PRINT " "
1044 PRINT " "
1045 PRINT " "
1046 PRINT " "
1047 PRINT " "
1048 PRINT " "
1049 PRINT " "
1050 PRINT " "
1051 PRINT " "
1052 PRINT " "
1053 PRINT " "
1054 PRINT " "
1055 PRINT " "
1056 PRINT " "
1057 PRINT " "
1058 PRINT " "
1059 PRINT " "
1060 PRINT " "
1061 PRINT " "
1062 PRINT " "
1063 PRINT " "
1064 PRINT " "
1065 PRINT " "
1066 PRINT " "
1067 PRINT " "
1068 PRINT " "
1069 PRINT " "
1070 PRINT " "
1071 PRINT " "
1072 PRINT " "
1073 PRINT " "
1074 PRINT " "
1075 PRINT " "
1076 PRINT " "
1077 PRINT " "
1078 PRINT " "
1079 PRINT " "
1080 PRINT " "
1081 PRINT " "
1082 PRINT " "
1083 PRINT " "
1084 PRINT " "
1085 PRINT " "
1086 PRINT " "
1087 PRINT " "
1088 PRINT " "
1089 PRINT " "
1090 PRINT " "
1091 PRINT " "
1092 PRINT " "
1093 PRINT " "
1094 PRINT " "
1095 PRINT " "
1096 PRINT " "
1097 PRINT " "
1098 PRINT " "
1099 PRINT " "
1100 PRINT " "
1101 PRINT " "
1102 PRINT " "
1103 PRINT " "
1104 PRINT " "
1105 PRINT " "
1106 PRINT " "
1107 PRINT " "
1108 PRINT " "
1109 PRINT " "
1110 PRINT " "
1111 PRINT " "
1112 PRINT " "
1113 PRINT " "
1114 PRINT " "
1115 PRINT " "
1116 PRINT " "
1117 PRINT " "
1118 PRINT " "
1119 PRINT " "
1120 PRINT " "
1121 PRINT " "
1122 PRINT " "
1123 PRINT " "
1124 PRINT " "
1125 PRINT " "
1126 PRINT " "
1127 PRINT " "
1128 PRINT " "
1129 PRINT " "
1130 PRINT " "
1131 PRINT " "
1132 PRINT " "
1133 PRINT " "
1134 PRINT " "
1135 PRINT " "
1136 PRINT " "
1137 PRINT " "
1138 PRINT " "
1139 PRINT " "
1140 PRINT " "
1141 PRINT " "
1142 PRINT " "
1143 PRINT " "
1144 PRINT " "
1145 PRINT " "
1146 PRINT " "
1147 PRINT " "
1148 PRINT " "
1149 PRINT " "
1150 PRINT " "
1151 PRINT " "
1152 PRINT " "
1153 PRINT " "
1154 PRINT " "
1155 PRINT " "
1156 PRINT " "
1157 PRINT " "
1158 PRINT " "
1159 PRINT " "
1160 PRINT " "
1161 PRINT " "
1162 PRINT " "
1163 PRINT " "
1164 PRINT " "
1165 PRINT " "
1166 PRINT " "
1167 PRINT " "
1168 PRINT " "
1169 PRINT " "
1170 PRINT " "
1171 PRINT " "
1172 PRINT " "
1173 PRINT " "
1174 PRINT " "
1175 PRINT " "
1176 PRINT " "
1177 PRINT " "
1178 PRINT " "
1179 PRINT " "
1180 PRINT " "
1181 PRINT " "
1182 PRINT " "
1183 PRINT " "
1184 PRINT " "
1185 PRINT " "
1186 PRINT " "
1187 PRINT " "
1188 PRINT " "
1189 PRINT " "
1190 PRINT " "
1191 PRINT " "
1192 PRINT " "
1193 PRINT " "
1194 PRINT " "
1195 PRINT " "
1196 PRINT " "
1197 PRINT " "
1198 PRINT " "
1199 PRINT " "
1200 GOTO4000

```



This is done by picking up the pills of silicon chip repairing vitamins which

Up - 7
Down - J
Left - Y
Right - I

A nice display awaits
you should you complete

Next month we publish the sequel to this game called *Repairman's Revenge*. And the author has speeded up his spax and armed Fred with an energy gun... don't miss it Sharp owners.

SHORT CIRCUIT


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```

460 PRINTTAB(33):"WIDER"
461 REM ***SET UP VARIABLES+***
462 MAN=56935-40
463 A=207
464 C=1
500 GOSUB 1000
520 GOTO 500
1000 GET A#
1001 POKE 4514,255:USR(68)
1010 IF PEEK(17828)=55 THEN POKE
1020 IF PEEK(17828)=73 THEN POKE
1030 IF PEEK(17828)=74 THEN POKE
1040 IF PEEK(17828)=89 THEN POKE
MAN,0:MAN=MAN-40
MAN,0:MAN=MAN-1
MAN,0:MAN=MAN-40
MAN,0:MAN=MAN-1
1042 USR(71)
1050 POKE MAN,A
1051 GOTO 5000
1052 IF A=206 THEN GOTO 3500
1055 IF (PEEK(MAN+40)-71) THEN A=1061
POKE MAN+40,0:GOTO 6000:POKE
1060 IF (PEEK(MAN+1)-0) THEN GOTO 3000
1070 IF (PEEK(MAN+1)-0) THEN GOTO 3000
1080 IF (PEEK(MAN+40)-0) THEN GOTO 3000
1090 IF (PEEK(MAN+40)-0) THEN GOTO 3000
1100 RETURN
1956 IF A=207 THEN GOTO 1155
1000 FOR B=206 TO 217
2001 POKE 4514,200:USR(68)
2010 POKE MAN,B
2025 C=C+1
2026 IF C=50 THEN 3040
2030 NEXT B
2075 GOTO 3000
2040 POKE MAN-1,271:IME MAN-1,27
2045 POKE MAN+1,227:POKE MAN+2,227
2050 POKE MAN,165
2060 POKE MAN+40,238:POKE MAN-40,238
2065 POKE MAN+80,238:POKE MAN-80,238
2072 POKE MAN-1,0:POKE MAN-2,0
2073 POKE MAN+1,0:POKE MAN+2,0
2074 POKE MAN,0
2075 POKE MAN+40,0:POKE MAN-40,0
2076 POKE MAN+80,0:POKE MAN-80,0
2090 FOR VC=1 TO 255:POKE 4514,VC:
USR(68):NEXT VC
3091 USR(71):FOR VB=1 TO 100:NEXT VB
3092 IF SC HS THEN PRINT"*****Well
done!" Please enter your name...."
3094 IF SC HS THEN INPUT X#
3095 AA=LEN(X#):IF AA 10 THEN GOTO 3097
3096 IF SC HS THEN HS=9C
3097 PRINTTAB(9):"ANOTHER GAME "
3098 GET A#
3099 IF A#="Y" THEN PRINTTAB(14):
"YES":GOTO 15
3100 IF A#="N" THEN END
3101 GOTO 3098
3500 IF (PEEK(MAN-40)-43)
THEN POKE MAN-40,71:
MAN=MAN+40:A=207:GOTO 7000
3510 POKE MAN,A
3515 GOTO 1160
5000 C=C+1
5001 POKE M(C),0
5010 IF C=9 THEN C=0
5020 X=INT(4*RND(1))
5025 POKE M(C),0

```





Arcade action for Beeb
 space captains with an eye
 for the alien. This is a ver-
 sion of that all-time arcade
 classic Defender. Flying
 over the mountainous
 terrain of your planet you
 come upon an alien
 invader swooping in for
 the attack.

Line the attacking ship up in the sights of your laser-blaster and fire away. If you score a hit the alien craft will explode into a million small fragments. These alien ships will keep on coming until you have wiped out the entire fleet.

and you have just three ships to complete the task.

There are three skill levels to master - but do not move above the first until you have mastered the controls. The program uses the ENVELOPE and VDU commands to provide

realistic sound and graphics.

There is on-screen scoring and you get an extra ship at 1,000 points, as well as a high score facility.

The author's high score is 1,500 on level three - can you better it?

DEFENDER

[illegible]

[illegible]


```

P70 MODE1:ACR=10:FR=1:FI=1:PI=PI:TURN
P80 1:R=1:W=1:LATIN:ITIME=1:R1A=50:R2=500:PI=177A:(C+LIV)*2,
1: " :VIA 51C0:GO
P70 GREFPROCTINT
RRC PRINT:TAH(15):"RBC Defend":PRINT:"You have three ships,1 mo
ve you down,""k moves you up,press A to increase speed""and
5 to slow down(N,B NOT stop),"""You can move through the moun
tain ""without exploding,but do not go too far"
R9H PRINT:"up or down,Press space bar to fire,if""you fly thr
ough divers you will explode,""Level 1 1 the (X100,10W) 1
to the""hard 1,there are more points 1 1 1 1 ""you in 1
other level,1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
910 PRINT:"Press 'S' to continue,"""J,McFarlane 1982,""REP:AT
INTILOETX="S"
910 CLS:PRINT:AG: " Your ship,""Bg: " Alien ship,Moves about
and fire:""at you,""G: " Death Satellite,Moves in close and
""explodes,""CHRX235:CHRX236: " Radar base,Fires accurate mis
siles:""at overhead ships,""CHRX237:CHRX238:
920 PRINT:1: " AA gun,Fires flak at overhead ships,":PRINT:"Press
S to start,"":REPEATUNTILOETX="S"
930 ENDPROC
940 KLPEATUNT:1:ADVAI (-5)=15:AS=50:1FB=4100 RS=200
950 GOTO 80
960 DATA:G,M,E, " " ,G,V,F,R
970 MODE1:GOTO50

```

GOLF

This is a variation on the usual golf programs in that you don't have to battle your way around an entire course before you get to chip the ball into the hole!

You'll find yourself on the green ready to play your final stroke. The green is presented on screen and the position of the ball in relation to the hole is shown. You have to guess the distance and type it in. If you miss the green is represented and you get another chance.

If you are successful another green is drawn up. The number of the green you are playing and running total of your score are displayed on the screen. Simple but nearly as frustrating as the real thing.



```

1 REM 'GOLF'
10 LET H=PI/PI
11 LET S=PI-PI
200 LET Z=INT (RND*12)+16
300 FOR J=0 TO Z
400 PRINT AT 21,J," "
500 NEXT J
600 FOR J=Z+2 TO 31
700 PRINT AT 21,J," "
800 NEXT J
850 PRINT AT 20,0,"O"
865 PRINT AT 0,0,"HOLE" .H
900 PRINT
910 PRINT "NO OF STROKES" .S
920 INPUT X
930 LET S=S+1
940 FOR J=0 TO X
1000 PRINT AT 20,J," "
1100 PRINT AT 20,J,"O"
1200 NEXT J
1300 IF X=Z+1 THEN GOTO 500
1320 FOR J=1 TO 50
1340 NEXT J
1350 CLS
1400 GOTO 20
1500 PRINT AT 21,X,"O"
1600 PRINT AT 20,X
1700 LET H=H+1
1800 FOR J=1 TO 30
1900 NEXT J
2000 IF H=10 THEN GOTO 600
2100 CLS
2200 GOTO 20
2300 CLS
2400 PRINT "END OF GAME"
2500 PRINT AT 10,5,"YOUR TOTAL W
AS" .S

```


Whose lousy idea was it anyway to go exploring burnt out volcanoes in Sicily.

"Oh - so its my fault is it that the volcano should blow, I suppose your idea was better was it? - our tenth year in Bognor with your mother and those three mangy cats that she just couldn't possibly leave with the neighbours like everyone else does."

"Thats right, bring my mother into it - as soon as something goes wrong its somehow always attributable to my mother."

Funny isn't it - how people can argue about mother-in-laws when their being chased down a mountain side by 3,000 tonnes of molten lava.

Their fate lies in your hands now as you control a small man desperate to escape.

There is a safe zone beckoning at the far end of the screen and you must guide this survivor to that zone before time runs out. If you make it to the safe zone you go on to the next level.



ZIG ZAG

```

1 TIME = 0
2 PRINT "WHAT IS IT DO YOU"
3 GOTO 1 TO 5 100 EAST
4 INPUT A
5 GRAPHICS 5
6 D=1: COLOR 1: FLOW 1: CLOUP
7 H=1: G=0: DRAW TO 74.01
8 GOTO 100: DRAW TO 74.01
9 FLOW 1: G=0: DRAW TO 74.01
10 FLOW 1: G=0: DRAW TO 74.01
11 FLOW 1: G=0: DRAW TO 74.01
12 FLOW 1: G=0: DRAW TO 74.01
13 FLOW 1: G=0: DRAW TO 74.01
14 FLOW 1: G=0: DRAW TO 74.01
15 FLOW 1: G=0: DRAW TO 74.01
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65 FLOW 1: G=0: DRAW TO 74.01
66 FLOW 1: G=0: DRAW TO 74.01
67 FLOW 1: G=0: DRAW TO 74.01
68 FLOW 1: G=0: DRAW TO 74.01
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70 FLOW 1: G=0: DRAW TO 74.01
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75 FLOW 1: G=0: DRAW TO 74.01
76 FLOW 1: G=0: DRAW TO 74.01
77 FLOW 1: G=0: DRAW TO 74.01
78 FLOW 1: G=0: DRAW TO 74.01
79 FLOW 1: G=0: DRAW TO 74.01
80 FLOW 1: G=0: DRAW TO 74.01
81 FLOW 1: G=0: DRAW TO 74.01
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86 FLOW 1: G=0: DRAW TO 74.01
87 FLOW 1: G=0: DRAW TO 74.01
88 FLOW 1: G=0: DRAW TO 74.01
89 FLOW 1: G=0: DRAW TO 74.01
90 FLOW 1: G=0: DRAW TO 74.01
91 FLOW 1: G=0: DRAW TO 74.01
92 FLOW 1: G=0: DRAW TO 74.01
93 FLOW 1: G=0: DRAW TO 74.01
94 FLOW 1: G=0: DRAW TO 74.01
95 FLOW 1: G=0: DRAW TO 74.01
96 FLOW 1: G=0: DRAW TO 74.01
97 FLOW 1: G=0: DRAW TO 74.01
98 FLOW 1: G=0: DRAW TO 74.01
99 FLOW 1: G=0: DRAW TO 74.01
100 FLOW 1: G=0: DRAW TO 74.01

```

```

1 IF TIME = 0 THEN GOTO 1
2 IF TIME = 1 THEN GOTO 1
3 IF TIME = 2 THEN GOTO 1
4 IF TIME = 3 THEN GOTO 1
5 IF TIME = 4 THEN GOTO 1
6 IF TIME = 5 THEN GOTO 1
7 IF TIME = 6 THEN GOTO 1
8 IF TIME = 7 THEN GOTO 1
9 IF TIME = 8 THEN GOTO 1
10 IF TIME = 9 THEN GOTO 1
11 IF TIME = 10 THEN GOTO 1
12 IF TIME = 11 THEN GOTO 1
13 IF TIME = 12 THEN GOTO 1
14 IF TIME = 13 THEN GOTO 1
15 IF TIME = 14 THEN GOTO 1
16 IF TIME = 15 THEN GOTO 1
17 IF TIME = 16 THEN GOTO 1
18 IF TIME = 17 THEN GOTO 1
19 IF TIME = 18 THEN GOTO 1
20 IF TIME = 19 THEN GOTO 1
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22 IF TIME = 21 THEN GOTO 1
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25 IF TIME = 24 THEN GOTO 1
26 IF TIME = 25 THEN GOTO 1
27 IF TIME = 26 THEN GOTO 1
28 IF TIME = 27 THEN GOTO 1
29 IF TIME = 28 THEN GOTO 1
30 IF TIME = 29 THEN GOTO 1
31 IF TIME = 30 THEN GOTO 1
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72 IF TIME = 71 THEN GOTO 1
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76 IF TIME = 75 THEN GOTO 1
77 IF TIME = 76 THEN GOTO 1
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79 IF TIME = 78 THEN GOTO 1
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81 IF TIME = 80 THEN GOTO 1
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87 IF TIME = 86 THEN GOTO 1
88 IF TIME = 87 THEN GOTO 1
89 IF TIME = 88 THEN GOTO 1
90 IF TIME = 89 THEN GOTO 1
91 IF TIME = 90 THEN GOTO 1
92 IF TIME = 91 THEN GOTO 1
93 IF TIME = 92 THEN GOTO 1
94 IF TIME = 93 THEN GOTO 1
95 IF TIME = 94 THEN GOTO 1
96 IF TIME = 95 THEN GOTO 1
97 IF TIME = 96 THEN GOTO 1
98 IF TIME = 97 THEN GOTO 1
99 IF TIME = 98 THEN GOTO 1
100 IF TIME = 99 THEN GOTO 1

```


At last this traditional board game has been transferred to the Atari - and it will keep you occupied for hours!

To start the game press START on the right hand side of the Atari keyboard. You will then see the board being drawn and the pieces being placed on it. You are the darker pieces at the bottom of the board. The computer will be the lighter ones at the top.

To enter your move, you type in the co-ordinates of

the piece that you want to move, eg A6 and then press return. Always enter the letter first. The computer will then prompt you with "XX TO?" (XX being the co-ordinates of the piece you want moving). Enter the position (co-ordinates) at the place where you want to move the piece.

You will then see the piece being moved. After a delay of approx. 20 seconds you will see the computer make its move. It is then

your turn again.

You can take any of the computer's pieces in the normal manner - jumping over the piece onto a vacant square. The computer can do the same. Multiple jumps are not allowed.

If you manage to reach the other end of the board, the piece will be made a king. You can recognise a king because of the cross it has between the four corners. The same applies

to the computer's pieces.

Only a king can move backwards and if you attempt to move a non-king backwards you will get an error message. You will then have to re-enter your move.

Many error traps have been included in the program to stop you cheating. For example if you try to move a piece belonging to the computer, you will be prompted with an error message and have to type in your move again!

DRAUGHTS

```
1 REM ***PARESH SOLANKI***
2 REM ***DRAUGHTS***
3 POKE 82,0:POKE 83,39
4 GRAPHICS 0:POKE 752,1:L=6+PEEK(741)+25
6+PEEK(742):POSITION 3,4: "DRAUGHTS:PO
SITION 23,41? "by parash solanki":SETCOL
OR 2,3,4:SETCOLOR 4,3,4
5 POSITION 6,9: "Press START to begin p
lay":POKE L+4,7:POKE L+5,6
6 IF PEEK(53279) > 6 THEN 6
9 POKE 752,0
10 GRAPHICS 7:SETCOLOR 1,1,4:SETCOLOR 2,
3,8:SETCOLOR 0,4,0:SETCOLOR 4,12,6:COLOR
1
11 PLOT 22,79:DRAWTO 22,75:DRAWTO 26,75:
DRAWTO 26,79:PLOT 22,77:DRAWTO 26,77
12 PLOT 31,79:DRAWTO 31,75:DRAWTO 34,75:
DRAWTO 34,77:PLOT 31,77:DRAWTO 35,77:DR
AWTO 35,79:DRAWTO 31,79
13 PLOT 45,79:DRAWTO 40,79:DRAWTO 40,75:
DRAWTO 45,75
14 PLOT 49,79:DRAWTO 49,75:DRAWTO 51,75:
DRAWTO 54,76:DRAWTO 54,78:DRAWTO 51,79:O
DRAWTO 49,79
15 PLOT 63,79:DRAWTO 58,79:DRAWTO 58,75:
DRAWTO 63,75:PLOT 58,77:DRAWTO 62,77
16 PLOT 67,79:DRAWTO 67,75:DRAWTO 72,75:
PLOT 67,77:DRAWTO 71,77
17 PLOT 82,75:DRAWTO 76,75:DRAWTO 76,79:
DRAWTO 82,79:DRAWTO 82,77:DRAWTO 76,77
18 PLOT 85,75:DRAWTO 85,79:DRAWTO 90,75:DR
AWTO 90,79:PLOT 85,77:DRAWTO 90,77
20 PLOT 12,3:DRAWTO 14,3:DRAWTO 14,7:PLO
T 12,7:DRAWTO 16,7
21 PLOT 12,12:DRAWTO 16,12:DRAWTO 16,14:
DRAWTO 12,14:DRAWTO 16,16:DRAWTO 16,16
22 PLOT 12,21:DRAWTO 16,21:DRAWTO 16,25:
DRAWTO 12,25:PLOT 12,23:DRAWTO 16,23
23 PLOT 12,30:DRAWTO 12,32:DRAWTO 16,32:
PLOT 16,30:DRAWTO 16,34
24 PLOT 16,39:DRAWTO 12,39:DRAWTO 12,41:
DRAWTO 16,41:DRAWTO 16,43:DRAWTO 12,43
25 PLOT 16,48:DRAWTO 12,48:DRAWTO 12,52:
DRAWTO 16,52:DRAWTO 16,50:DRAWTO 12,50
26 PLOT 12,57:DRAWTO 16,57:DRAWTO 12,61
```

```
27 PLOT 12,70:DRAWTO 16,70:DRAWTO 16,68:
DRAWTO 12,68:DRAWTO 12,70:PLOT 13,68:DR
AWTO 13,66:DRAWTO 15,66:DRAWTO 15,68
29 FOR A=20 TO 74 STEP 18:FOR B=10 TO 78
STEP 18
30 FOR S=B TO B+8:PLOT A,S:DRAWTO A+B,S:
PLOT A+9,S-9:DRAWTO A+17,S-9:NEXT S
40 NEXT B:NEXT A
50 PLOT 19,0:DRAWTO 92,0
60 DRAWTO 92,73:DRAWTO 19,73:DRAWTO 19,0
70 FOR C=66 TO 70:FOR A=22 TO 78 STEP 18
:COLOR 2:PLOT A,C:DRAWTO A+4,C
80 PLOT A+9,C-9:DRAWTO A+13,C-9
85 PLOT A,C-18:DRAWTO A+4,C-18
90 COLOR 3:PLOT A,C-54:DRAWTO A+4,C-54:P
LOT A+9,C-45:DRAWTO A+13,C-45:PLOT A+9,C
-63:DRAWTO A+13,C-63:NEXT A:NEXT C
100 COM CH$(300):CH$="A257A44A631A1B81
658350B5378724C256443C630C817D162034905
36D723E255E442E629E16F161F34BF535"
101 CH$(LEN(CH$)+1)="F722625464416628681
5H160H347H534H721"
105 COM A$(10),B$(10),M(2),C(10):M
(1)=-6:M(2)=-7:DIM M$(200)
106 FOR A=1 TO B:READ B1(B)=B:NEXT A:DA
TA 22,31,40,49,58,67,76,85
107 FOR A=1 TO B:READ B1(C)=B:NEXT A:DA
TA 7,16,25,34,43,52,61,70
108 M1$="1B22701740701658701576702431612
3496122676121856131225230405229585228765
2373143564943356743348543"
109 M1$(LEN(M1$)+1)="4422344340344258344
176345031254942548672547852557221656401
655581654761663107624907616707608507"
110 FOR A=1 TO B:FOR A=15 TO 63:X(A)=9:IF A
< 64 AND A < 65 AND A < 51 AND A < 52 AND A <
53 AND A < 58 AND A < 59 THEN X(A)=-1
120 IF A < 45 AND A < 33 AND A < 38 AND A < 39
AND A < 40 THEN X(A)=0
130 IF A < 32 AND A < 14 AND A < 19 AND A < 20
AND A < 25 AND A < 26 AND A < 27 THEN X(A)
=1
140 NEXT A
145 FOR A=0 TO 14:X(A)=9:NEXT A
150 REM ***ACCEPT PLAYER'S MOVE***
```



```

154 FOR CH=15 TO 63:IF X(CH)<0 AND X(CH)
<>9 THEN 160
155 NEXT CH:?"YOU LOSE TURKEY!":GOTO
10000
160 PRINT "ENTER MOVE":INPUT A$:?"A:"
TO":INPUT B$:IF LEN(A$)<2 OR LEN(B$)<2
2 THEN GOSUB 6000:PRINT "MOVE NOT ACCEPT
ED":GOTO 150
161 GOSUB 7500:GOSUB 2010:IF X(P1)<1 THEN
GOSUB 6000:PRINT "NO PIECE AT ":A$:GOTO
150
162 IF P>2 AND X(P1)>2 THEN GOSUB 6000:P
RINT "CAN'T MOVE BACKWARDS" NO KING AT "
":A$:GOTO 150
163 IF ABS(P-2)=6 THEN IF (ABS(P-2))/6<>
INT((ABS(P-2)-1)/6) THEN GOSUB 6000:GOTO 1
50
164 IF ABS(P-2)=7 THEN IF (ABS(P-2)-1)/7<>
INT((ABS(P-2)-1)/7) THEN GOSUB 6000:GOTO 1
50
166 IF X(Z1)<0 THEN GOSUB 6000:PRINT B$:
" OCCUPIED":GOTO 150
169 IF ABS(P-2)>7 THEN 171
170 GOTO 179
171 IF X(P+((Z-P)/2))>0 THEN GOSUB 6000
:PRINT "NO PIECE TO TAKE":GOTO 150
172 X(P+((Z-P)/2))=0:TE=(P+((Z-P)/2)):FO
R TEST=1 TO 192 STEP 6:IF TE=VAL(M1$(TES
T),TEST+1) THEN 175
173 NEXT TEST
174 GOTO 179
175 S1=VAL(M1$(TEST+2,TEST+31)):S2=VAL(M1
$(TEST+4,TEST+51)):COLOR 1:A=S1:B=S2:GOSU
B 2000:GOTO 179
179 X1=ASC(A$(1,1)):X2=ASC(B$(1,1))
180 X1=X1-64:Y1=X2=X2-64:X2=B(X2)
190 Y1=C(VAL(A$(2,21)):Y2=C(VAL(B$(2,21)
1
200 A=X1:B=Y1:COLOR 1:GOSUB 2000
210 A=X2:B=Y2:COLOR 2:GOSUB 2000
220 X(Z1)=X(P):X(P)=0
230 IF Z>59 AND Z<64 THEN X(Z1)=2
231 GOSUB 7000
300 GOTO 3000
2000 FOR UN=B-4 TO B:PLOT A,UN:DRAWTO A+
4,UN:NEXT UN:RETURN
2010 FOR WX=1 TO 128 STEP 4:IF A$=CH$(WX
,WX+1) THEN P=VAL(CH$(WX+2,WX+31)):GOTO 2
040
2020 NEXT WX
2040 FOR WX=1 TO 128 STEP 4:IF B$=CH$(WX
,WX+1) THEN Z=VAL(CH$(WX+2,WX+31)):GOTO 2
050
2045 NEXT WX
2050 RETURN
3000 FOR CH=15 TO 63:IF X(CH)<0 THEN 300
8
3001 NEXT CH:PRINT "YOU WIN BUSTER!":GOT
O 10000
3008 C=0:N=15
3009 IF X(N1)>0 THEN 3370
3010 FOR M=1 TO 2:IF X(N1)=2 AND X(N-M(M
1))>0 AND X(N-2*M(M1))>0 THEN 3410
3047 IF X(N+M(M1))>0 THEN 3360
3048 IF X(N+M(M1))>9 THEN 3360
3350 IF X(N+M(M1))>0 AND X(N+2*M(M1))>0 TH

```

```

EN 3390
3360 NEXT M
3370 N=N+1:IF N=<64 THEN 3009
3380 IF C=0 THEN 3500
3390 C=M(M1):W=N+2:C:GOTO 3420
3410 C=M(M1):W=N+2:C
3420 X(W1=X(N)):X(N)=0:X(N+C)=0
3430 FOR A1=1 TO 192 STEP 6:IF VAL(M1$(A
1,A1+1))=N THEN H1=VAL(M1$(A1+2,A1+31)):H
2=VAL(M1$(A1+4,A1+51)):GOTO 3450
3440 NEXT A1
3450 COLOR 1:A=H1:B=H2:GOSUB 2000
3451 FOR A1=1 TO 192 STEP 6:IF VAL(M1$(A
1,A1+1))=W THEN H1=VAL(M1$(A1+2,A1+31)):H
2=VAL(M1$(A1+4,A1+51)):GOTO 3470
3452 NEXT A1
3470 COLOR 3:A=H1:B=H2:F=H1:M=H2:GOSUB 2
000
3480 FOR A1=1 TO 192 STEP 6:IF VAL(M1$(A
1,A1+1))=N+C THEN H1=VAL(M1$(A1+2,A1+3
1)):H2=VAL(M1$(A1+4,A1+51)):GOTO 3490
3481 NEXT A1
3490 COLOR 1:A=H1:B=H2:GOSUB 2000
3491 GOTO 5000
3500 FOR TR=1 TO 200
3501 X=INT(RND(1)*48)+15:IF X(X1)=0 THEN
3600
3510 FOR M=1 TO 2:IF X(X+M(M1))>0 THEN C=
M(M1):GOTO 3650
3520 IF X(X)=2 AND X(X-M(M1))>0 AND X-M(
M1)<64 THEN C=M(M1):GOTO 3650
3550 NEXT M
3600 NEXT TR:PRINT "I GIVE UP!":GOTO 100
00
3650 W=X+C:N=X:X(W1=X(N)):X(X1)=0
3700 FOR A1=1 TO 192 STEP 6:IF VAL(M1$(A
1,A1+1))=N THEN H1=VAL(M1$(A1+2,A1+31)):H
2=VAL(M1$(A1+4,A1+51)):GOTO 3800
3710 NEXT A1
3800 COLOR 1:A=H1:B=H2:GOSUB 2000
3900 FOR A1=1 TO 192 STEP 6:IF VAL(M1$(A
1,A1+1))=W THEN H1=VAL(M1$(A1+2,A1+31)):H
2=VAL(M1$(A1+4,A1+51)):GOTO 4000
3950 NEXT A1
4000 COLOR 3:A=H1:B=H2:F=H1:M=H2:GOSUB 2
000
5000 IF W<14 AND W<19 THEN X(W1)=2
5001 GOSUB 7050
5010 GOTO 150
6000 FOR I=1 TO 100:SOUND 0,36,36,36:NEX
T 1:SOUND 0,0,0,0:RETURN
7000 IF X(Z1)=2 THEN COLOR 3:PLOT A,B:ORA
WTO A+4,B-4:PLOT A+4,B:DRAWIO A,B-4
7010 RETURN
7050 IF X(W1)=2 THEN COLOR 2:PLOT F,M:DR
AWTO F+4,M-4:PLOT F+4,M:DRAWIO F,M-4
7060 RETURN
7500 IF ASC(A$)>72 OR ASC(B$)>72 OR VAL(
A$(2,2))>B OR VAL(B$(2,2))>B THEN PRINT
"COORDINATES DO NOT EXIST!":GOTO 150
7510 RETURN
9999 END
10000 ? "PRESS START TO REPLAY"
10010 IF PEEK(53279)<>6 THEN 10010
10020 RUN

```


Why is it that every time I go for a spin in my laser base hordes and hordes of aliens start bombarding me with missile fire.

Last week it was the Galaxeroids, before that the Solar Saucers, and now it's the blasted Niveks.

And there's the Space Skins and the Pluto Punks - not that I mind them too much - they dress a bit weird and are hooked on Martian mushrooms but apart from that they keep themselves to themselves.

No - it's the likes of the Niveks that annoy me - mindless space vandals each and every one. Last week, for example, me and

a few other laser bases were watching our Space Sector quarter finals of the Intergalactic Cup when, two minutes before the end, the sky above the stadium was completely blacked out by a swarm of Niveks splitting missile fire down on to the pitch.

The refdroid appealed for a cease fire over the telescaner but the Niveks weren't interested in the Laserball anyway - it was sheer violence they were after. They could be the death of that game.

So as you enter keep one finger on the CTRL character keys marked below.



NIVEKS INVADERS

© REM K. GOULDING

COPY RIGHT (C)

6/6/82

1 GOSUB 3000

2 S=0

3 L=3

10 GRAPHICS 0

11 SETCOLOR 2,10,4

12 COLOR 18:PLOT 0,1:DRAWTO 39,1

13 L=L+1

15 COLOR 23:PLOT 2,20:DRAWTO 37,20

16 COLOR 24:PLOT 2,19:DRAWTO 38,19

20 POKE 752,1:POKE 755,4

30 A=L

40 C=0

50 D=20

60 POSITION 0,0:FOR I=1 TO A*2:?" "":NE

XT I:?" "":

70 POSITION 26,0:?" "":

80 FOR I=1 TO 38 STEP 3

90 POSITION I,2:?" "":

95 NEXT I

100 FOR I=1 TO 33 STEP 2

110 FOR J=A TO A+6 STEP 2

120 POSITION I,J:?" "":

130 NEXT J

140 NEXT I

160 FOR I=0 TO 6 STEP 2

170 IF C=1 THEN 220

180 LOCATE 38,A+1,8

190 IF B>32 THEN COLOR 8:PLOT 38,A+1:PO

SITION 0,3:?" "":POSITION 0,A+9:?" "":A=A+

1:C=1:POSITION 0,A+1:?" "":

195 IF B>32 THEN POSITION A*2-3,0:?" "":

200

200 POSITION 0,A+1:?" "":

210 GOTO 250

220 LOCATE 2,A+1,8

230 IF B>32 THEN COLOR 8:PLOT 2,A+1:POS

ITION 0,3:?" "":POSITION 0,A+9:?" "":A=A+

1:C=0:POSITION 1,A+1:?" "":

235 IF B>32 THEN POSITION A*2-3,0:?" "":

240

240 POSITION 0,A+1:?" "":

250 IF RND(0)>0.95 AND I<6 THEN 2000

260 IF STRIG(0)=0 THEN GOSUB 500

265 I=I+1

270 IF STICK(0)=11 AND D>1 THEN D=D-1

273 POKE 19,0+J

275 IF STICK(0)=7 AND D<36 THEN D=D+1

280 POSITION D,22:?" "":

281 IF R=1 THEN 2030

282 F=F+1

287 IF F=4 THEN POKE 755,4

284 IF F=8 THEN F=0:POKE 755,0

285 IF A=13 THEN 1000

286 IF A=11 THEN SETCOLOR 2,3,3

287 IF A=8 THEN SETCOLOR 2,2,4

288 NEXT I

290 GOTO 160

500 REM FIRING

505 IF K=3 THEN RETURN

507 I=0

510 COLOR 37

520 FOR J=21 TO 4 STEP -1

530 LOCATE 0,1,J,6

540 SOUND 0,3,6,8

550 PLOT 0,1,J

560 IF G<32 THEN 600

570 NEXT J

600 REM

610 COLOR 32:PLOT 0+1,21:DRAWTO 0+1,J

615 IF G<32 THEN FOR J=10 TO 100 STEP 1

620 SOUND 0,J+6,10,8:NEXT J

617 SOUND 0,0,0,0

620 IF G=119 THEN S=S+10

630 IF G=42 THEN R=0:SI=S+100:IF P=119

THEN S=S+10

635 IF (G=119 OR G=42) AND S=0 AND S/680

=INT(S/680) THEN 10

640 RETURN




```

1000 REM INVASION
1010 GRAPHICS 0
1015 SETCOLOR 2,0,0
1020 L=6+PEEK(741)+256*PEEK(742)
1030 POKE L+2,7:POKE L+5,6:POKE 752,1
1040 POKE 764,255
1050 POSITION 0,2
1060 ? "YOU'VE BEEN INVADED!"
1070 POSITION 20,4: ? "the earth is doome
d."
1080 POSITION 0,6: ? "YOUR SCORE IS ";S+5
1
1090 POSITION 0,8: ? "DO YOU WANT ANOTHER
GO (Y OR N)?"
1110 GET #2,A
1120 IF A=B9 THEN RUN
1130 IF A<>78 THEN ? "INPUT (Y OR N)":GO
TO 1110
1140 GRAPHICS 0:END
2000 REM SPACE ATTACK
2010 N=INT(RND(0)*13)*3:N1=N:M=3:M1=M
2020 R=1:P=32
2030 COLOR F:PLOT N1,M1
2035 IF M=19 THEN 2200
2040 LOCATE N,M,P:SOUND 1,M*10,10,B
2050 COLOR 42:PLOT N,M:N1=N:M1=M
2060 M=M+1
2070 N=N+INT(RND(0)*3)-1
2080 IF N<2 THEN N=2
2090 IF N>38 THEN N=38
2095 SOUND 1,0,0,0
2100 GOTO 2060
2200 FOR V=19 TO 22
2210 COLOR 42
2220 IF N<5 OR N>34 THEN 2280
2222 PLOT N-(V-19),V:DRAWTO N+(V-19),V
2225 FOR X=1 TO 5:SOUND 1,X*9,10,B:NEXT
X
2230 NEXT V
2235 SOUND 1,0,0,0
2240 FOR V=19 TO 22
2250 COLOR 32
2260 PLOT N-(V-19),V:DRAWTO N+(V-19),V
2265 FOR X=1 TO 10:NEXT X
2270 NEXT V
2275 PLOT 0,0
2277 IF D=N-5 AND D<N+3 THEN 1000
2280 R=0:GOTO 2060
3000 REM RULES
3010 GRAPHICS 0:POKE 82,0
3020 POSITION 12,3: ? "NIVEK'S INVADERS"
3030 POSITION 12,4: ? ""
3040 POSITION 0,7: ? "DO YOU WANT TO SEE
THE RULES (Y OR N)?"
3050 OPEN #2,0,0,"K:"
3060 GET #2,A
3070 IF A=78 THEN RETURN
3080 IF A<>B9 THEN ? "INPUT (Y OR N)":GO
TO 3060
3090 GRAPHICS 0
3100 ? " THIS GAME IS LIKE SPACE INVADER
5 BUT THERE ARE SOME "
3110 ? "DIFFERANCES,YOU HAVE TO SHOOT A
LL THE 'w' SHAPED INVADERS:"
3120 ? " BEFOREYOU GET DESTROYED"
3130 ? : ? "THERE ARE 2 WAYS TO BE DESTRO

```

```

YED"
3140 ? : ? "1. GET HIT BY A ***
3150 ? "2. GET INVADED"
3160 ? : ? : ? "WHEN THE GAME STARTS,THERE
IS AN ARROW"
3170 ? "AT THE TOP OF THE SCREEN,WHEN IT
REACHES":
3180 ? "THE ' ' THEN YOU WILL BE INVADED'
"
3190 ? "THE ARROW MOVES CLOSER TO THE ' '
EVERY"
3200 ? "TIME A 'w' HIT'S THE SIDE OF THE
SCREEN"
3210 ? "AND CHANGES DIRECTION"
3220 ? : ? "THE ' ' REPRESENTS THE EARTH"
3230 ? "THE 'w' REPRESENTS THE INVASION
FORCE"
3240 ? : ? "PRESS SPACE BAR TO CONTINUE"
3250 GET #2,A
3260 GRAPHICS 0
3270 ? "THERE ARE SOME LARGE ' ' NEAR THE
TOP"
3280 ? "OF THE SCREEN.THESE ARE THE MOTH
ER SHIPS"
3290 ? "THEY ALWAYS KEEP OUT OF YOUR RAN
GE"
3300 ? "AND IT IS THESE SHIPS WHICH INVA
DE YOU"
3320 ? : ? "THE 'w' ARE WORTH 10 POINTS"
3330 ? "THE ' ' ARE WORTH 100 POINTS"
3340 ? : ? "BEFORE YOU CAN SHOOT THE INVA
DERS,"

```


3350 ? "YOU HAVE TO SHOOT THROUGH THEIR
BARRIERS"
3360 ? "JUST ABOVE YOUR BLASTER AT THE F
OOT OF"
3370 ? "THE SCREEN."
3380 ? : ? : ? "YOU HAVE ONLY 1 BLASTER SO
BE CAREFUL"
3390 ? : ? : ? "PRESS THE SPACE BAR TO BEG
IN!"
3400 GET #2, A
3410 RETURN

COMMENTS ON PRINTOUT

USE JO:

180 between "end quotes should be "CTRL R1"
190 between quotes should be "CTRL F1CTRL R1"
200 between quotes should be "CTRL SHIFT 12,2nd quote"ESC SHIFT RELJ
210 between "12 ESC CTRL R1"
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980 between quotes should be "12 ESC CTRL R1"
990 "12 ESC CTRL R1"

CTRL = CONTROL KEY
DEL = DELETE/END SPACE KEY
ESC = ESCAPE KEY
SHIFT = SHIFT KEY

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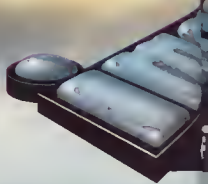
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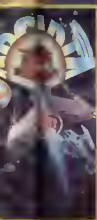
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The controls are simple; up=F1, down=F3, left=CRSRup/down, right=CRSRleft/right.

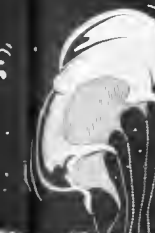
```
10 #TV255
20 #KEY11MG.701M
30 MODE7
40 VDU23,82021010,0,
50 DIM TX(5)
60 PROC1
70 PROC5
80 REPEAT
90 REPEAT
100 PROCM
110 PROCN
120 PROCY
130 PROCM
140 PROCN
150 PROC2
160 FX=FX+1
170 UNTILGX=0 OR FX=0
180 IF GX=0 THEN 250
190 FX=0
```




```

200 ?Z%=32
210 Z%=Z%+40
220 D%=D%+40
230 E%=E%+40
240 UNTIL 0
250 FOR A%=1 TO 25
260 SOUND3,-11,RND(155)+99,2
270 NEXT
280 END
290 DEFPROC
300 ?X%=1
310 X%=Y%
320 IF INKEY=-57 THEN Y%=Y%-1:IF Y%<32625 THEN Y%=32625
330 IF INKEY=-56 THEN Y%=Y%+1:IF Y%>32661 THEN Y%=32661
340 ?Y%=32
350 X%Y2=32
360 ?Y%=247
370 Y%Y1=240
380 Y%Y2=250
390 ENDPROC
400 DEFPROC
410 S%=0
420 FOR B%=1 TO 5
430 IF T%(B%)=0 THEN S%=B% B%=5
440 NEXT
450 IF S%=0 THEN ENDPROC
460 T%(S%)=Z%+40
470 SOUND1 -10,43,2
480 ENDPROC
490 DEFPROC
500 FOR B%=1 TO 5
510 IF T%(B%)=0 THEN 630
520 ?(T%(B%))=32
530 T%(B%)=T%(B%)+40
540 ?(T%(B%))=181
550 IF T%(B%)>32624 THEN PROC(B%)
560 IF T%(B%)>32664 THEN 630
570 G%=G%+1
580 ?(T%(B%))=32
590 T%(B%)=0
600 SOUND0,-15,5,5
610 PRINTTAB(26,24),*,"G%,"*
620 ?32704=(RND(7)+120)
630 NEXT
640 ENDPROC
650 DEFPROC
660 B%=RND(0%)
670 IF B%=4 THEN PROC
680 ENDPROC
690 DEFPROC
700 B%=RND(20)
710 IF B%=0 THEN H%=-H%
720 IF B%>0 THEN H%=-1
730 IF B%<0 THEN H%=1
740 ?Z%=32
750 Z%=Z%+H%
760 IF H%=1 THEN ?Z%=185

```




```

770 IF H%=-1 THEN T% = 230
780 ENDPROC
790 DEFPROC(U%)
800 FOR A% = 0 TO 2
810 IF Y%+R%<T%(U%) THEN 670
820 K% = K%+1
830 SOUND2, -15, K%*2.3
840 TX(U%) = 0
850 PRINTAB(6, 24); K%;
860 73254 = (RND(7)+144)
870 NEXT
880 ENDPROC
890 DEFPROC
900 AS% = TIME
910 REPEAT
920 UNTIL TIME > AS%+1:
930 ENDPROC
940 DEFPROC
950 CLS
960 FOR A% = 1 TO 5
970 TX(A%) = 0
980 NEXT
990 Z% = 31794
1000 Y% = 32640
1010 D% = 31786
1020 E% = 31822
1030 F% = 0
1040 G% = 12
1050 H% = 1
1060 I% = 0
1070 FOR A% = 31744 TO 32664 STEP 40
1080 73254 = (RND(7)+144)
1090 NEXT
1100 Y% = 245
1110 Y% = 240
1120 TX = 250
1130 PRINTAB(1, 24); "Score "; G%;
1140 PRINTAB(20, 24); "Lives "; H%;
1150 ENDPROC
1160 DEFPROC

```

```

1170 PRINTAB(14, 7); CHR$(13); CHR$(14); "CATCH"
1180 PRINTAB(14, 8); CHR$(13); CHR$(14); "CATCH"
1190 73254 = (RND(7)+144)
1200 CLS
1210 PRINT "CHR$(130)"In this game the objective is to
1220 PRINTCHR$(130)"prevent the falling objects from
1230 PRINTCHR$(130)"hitting the ground".
1240 PRINTCHR$(130)"To do this you must catch them all"
1250 PRINTCHR$(130)"with your net. To help you"
1260 PRINTCHR$(130)"in this task you are allowed 12"
1270 PRINTCHR$(130)"lives. However the plane dropping the
1280 PRINTCHR$(130)"objects will descend as time goes on".
1290 PRINT CHR$(131)"To move the net use the"
1300 PRINTCHR$(131)"following controls "
1310 PRINTCHR$(129)"P - right"
1320 PRINTCHR$(129)"O - left"
1330 PRINTCHR$(132)"Press the red key"CHR$(129)"F1"CHR$(132)"at the end of a
1340 PRINTCHR$(132)"game to restart"
1350 PRINTCHR$(132)"Press any key to continue" 9=GET
1360 CLS
1370 PRINT "CHR$(133)"Enter the difficulty levels for "
1380 PRINT "CHR$(130)"Plane decent (1 - fast, to 3 - slow)"
1390 9=GET
1400 9%=9%-48
1410 IF 9%<1 OR 9%>3 THEN 1390
1420 0% = 20*9%
1430 PRINT "CHR$(129)"Speed (0 - fast, to 4 - slow)"
1440 I% = GET
1450 I% = I%-48
1460 IF I%<0 OR I%>4 THEN 1440
1470 PRINT "CHR$(131)"Rate of drop (1 - fast to 4 - slow)"
1480 0% = GET
1490 0% = 0%-48
1500 IF 0%<1 OR 0%>4 THEN 1480
1510 0% = 0%-48
1520 ENDPROC

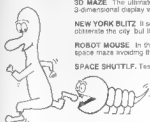
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3 REM
4 CLR COSUE1000
5 ?=3670 32F=7702
6 POKE3670 15 58=36876 31=36577 NR=4 MS=0
7 SK=0 PRINT "LEVEL 1 GETHIF NR=AL(NR) IFHFI
8 GOTO70000 INT NR/THEN3
9 PRINT "25" SK TRB(10) "41" H3
10 POKE3671 110
11 H1=4 H2=4 H3=4 H4=4 H5=4 H6=4 H7=4
12 H8=4 H9=4 H10=4 H11=4 H12=4 H13=4 H14=4 H15=4
13 H16=4 H17=4 H18=4 H19=4 H20=4 H21=4 H22=4 H23=4 H24=4 H25=4
14 H26=4 H27=4 H28=4 H29=4 H30=4 H31=4 H32=4 H33=4 H34=4 H35=4
15 H36=4 H37=4 H38=4 H39=4 H40=4 H41=4 H42=4 H43=4 H44=4 H45=4
16 H46=4 H47=4 H48=4 H49=4 H50=4 H51=4 H52=4 H53=4 H54=4 H55=4
17 H56=4 H57=4 H58=4 H59=4 H60=4 H61=4 H62=4 H63=4 H64=4 H65=4
18 H66=4 H67=4 H68=4 H69=4 H70=4 H71=4 H72=4 H73=4 H74=4 H75=4
19 H76=4 H77=4 H78=4 H79=4 H80=4 H81=4 H82=4 H83=4 H84=4 H85=4
20 H86=4 H87=4 H88=4 H89=4 H90=4 H91=4 H92=4 H93=4 H94=4 H95=4
21 H96=4 H97=4 H98=4 H99=4 H100=4 H101=4 H102=4 H103=4 H104=4
22 H105=4 H106=4 H107=4 H108=4 H109=4 H110=4 H111=4 H112=4 H113=4
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218 H1769=4 H1770=4 H1771=4 H1772=4 H1773=4 H1774=4 H1775=4 H1776=4
219 H1777=4 H1778=4 H1779=4 H1780=4 H1781=4 H1782=4 H1783=4 H1784=4
220 H1785=4 H1786=4 H1787=4 H1788=4 H1789=4 H1790=4 H1791=4 H1792=4
221 H1793=4 H1794=4 H1795=4 H1796=4 H17
```




BY MARK DAWSON

GHOST TRAP

You play a dangerous game when you go in search of man-eating ghosts — but the rewards are high!

Use the laser to lure the hungry ghosts into traps. You'll be rewarded with 20 points.

Once in a trap, a ghost will disappear —

then the trap and a new ghost will appear in a different position on your screen. You must also steer clear of the traps.

There are seven skill levels, all with increasing speeds and numbers of ghosts to deal with. The controls are: up=F1, down=F2, left=CRSR up/down, right=CRSR right.

RUNS ON A VIC-20 IN 3.5K



```

10 CLS
11 DIM A$(10,10)
120 PRINT TAB(12);"ZAX"'S U",TAB
130 PRINT "DO YOU WANT INST
RUCTIONS?"
140 INPUT B$
150 GOSUB 7000
160 IF B$="YES" THEN GOTO 2100
170 LET LEVEL=0
180 LET STRENGTH=1000
190 "F2"
200 LET COMPUTER=INT (RND*5)+1
210 LET MACHINE=INT (RND*4)+2
220 CLS
230 PRINT "YOU ARE NOW BEING TR
ANSFERRED TO ZAX"'S U."
240 LET LEVEL=LEVEL+1
250 GOSUB 8000
260 CLS
270 IF STRENGTH<1 THEN GOTO 550
280
290 FOR C=1 TO 10
300 PRINT A$(C)
310 NEXT C
320 PRINT "LEVEL," LEVEL
330 PRINT "STRENGTH," STRENGTH
340 IF HG<1 THEN PRINT "YOU HAV
E THE KEY"
350 PRINT "WHICH DIRECTION DO
YOU WISH TO GO."
360 INPUT B$
370 GOSUB 7050
380 LET STRENGTH=STRENGTH-1
390 LET A$(A,AR)=""
400 LET A=A+(A.>10 AND B$ "SOUT

```



ZAX'S V

RUNS ON A SPECTRUM IN 16K

BY MARK LATTO

I was sitting in my office enjoying a large Pangalachargleblast when the call came. I picked up the Visiviewer. It was the chief.

"I want you to go to the planet Zax's V and investigate a leak," he growled. "I'm no plumber," I replied. "Cut the wisecracks," he snarled. "Just listen. We've been getting reports from our man out on Zax that there's a double-agent operating — and he's selling Federation secrets to the Monotrons. Unfortunately it looks as if the Monotrons got to our man before he could find out the identity of the double agent. Now I want you to find out who this guy is and stop him — permanently."

"The only clue we have so far," the chief said, continuing his seemingly endless briefing, "is that the identity of the double agent is stored in the memory of a computer on the top storey of an office block in downtown Zaxville. That was the last message our man managed to get out before they bumped him off. OK, so now it's over to you..."

This is a graphics adventure which will have you baffled from

some time. As the private-eye on the case your job is to get to the top of that five storey office block and discover the name of the double agent. Easy. Well, not quite. You may come across guards as you make your way towards the computer — and these are decidedly unfriendly.

Also, the only way to get from floor to floor is by lift. And these lifts are locked and barred. Before you can go up you must find the lift key in one of the five rooms on each floor. A time consuming task. Beware of the tasty looking snacks you may find in the rooms — no doubt left behind by the office workers. Some may have been poisoned by Monatron spies.

Once you manage to reach the top floor you'll find the computer Deep Throat ready to tell you the name of the double agent. Well, almost ready. It appears that the double agent has already been to the office before you — and has planted a bomb which you must defuse.

Full instructions for this exciting adventure in the underworld are included in the program. Here's looking at you kids.

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```
2690 PRINT "YOU ARE AT THE LIFT  
DO YOU HAVE THE KEY TO REMOVE TH
```

```
2700 IF B$="YES" THEN PRINT "HI  
2710 GOSUB 7000  
2720 IF B$="YES" AND HC=1 THEN G  
GOTO 140  
2730 IF B$="YES" THEN PRINT AT 2  
1,0,"NO YOU DON'T"  
2740 LET A$(A,AR)=""  
2745 LET STRENGTH=STRENGTH-100-I  
NT (RND*(300))  
2750 LET A=A+1  
2755 LET A$(A,AR)=""  
2760 GOTO 20  
3000 PRINT
```

```
3010 PRINT AT 5,5:"YOU HAVE FOUN  
D THE KEY"  
3020 PRINT AT 7,5,"TO GET TO THE  
CROSS THE"  
3030 PRINT AT 9,5,"FRONT OF THE  
LIFT."  
3040 LET HC=1  
3050 FOR C=1 TO 250  
3060 NEXT C  
3070 CLS  
3080 RETURN  
3500 PRINT
```

```
3510 FOR D=1 TO 50  
3520 PRINT AT 7,7,"",AT 10,7  
,"",AT 8,8,"",AT 9,8,""  
3530 IF AND(.03) THEN GOTO 3600  
3540 PRINT AT 7,8,"",AT 10,7  
,"",AT 8,8,"",AT 9,8,""  
3550 RAND RND  
3560 NEXT D  
3570 GOTO 3710  
3580 FOR E=1 TO 4  
3610 PRINT AT 12,7,"",AT 12,  
8,""  
3620 NEXT E  
3630 PRINT AT 12,7,""  
3640 GOTO 3540  
3710 CLS  
3720 LET C$="(65536-(PEEK 16436+  
(256*PEEK 16437))/50)"  
3730 FOR C=0 TO 9  
3740 PRINT AT 11,C,C,AT C,11,C;A  
T C,0;" "  
3750 NEXT C  
3760 LET D=INT (RND*9)  
3770 LET E=INT (RND*9)  
3780 PEEK 16436+255  
3790 PEEK 16437+255  
3800 PRINT AT 10,0,"DETONATION I  
N ",300-VAL C$, "SECONDS"  
3810 IF VAL C$>300 THEN GOTO 395  
0  
3820 INPUT B$  
3830 IF LEN B$>2 OR B$(1)<"0" OR  
B$(1)<"9" OR B$(2)<"1" OR B$(2)  
<"9" THEN GOTO 3810  
3840 IF VAL B$(1)=D AND VAL B$(2)  
=E THEN GOTO 3870  
3850 PRINT AT B$(2),VAL B$(1)  
,(INT ((ABS (VAL B$(2)-E)+ABS (VAL  
B$(1)-D))/2))  
3860 GOTO 3800  
3870 LET D=INT (RND*100000)  
3880 CLS  
3890 PRINT "DETONATION IN ",300-  
VAL C$, "SECONDS"  
3895 IF VAL C$>300 THEN GOTO 395  
0  
3900 PRINT "ENTER CODE NUMBER"  
3910 INPUT B$  
3920 IF B$>STR$ D THEN PRINT "LO
```

```
WER"  
3930 IF B$>STR$ D THEN PRINT "HI  
GHER"  
3940 IF B$>STR$ D THEN GOTO 7100  
3941 PRINT AT 0,0,  
3950 GOTO 3890  
3960 PRINT "YOU ARE OUT OF TIME  
AND WERE KILLED."  
3970 GOTO 8500  
4000 PRINT
```

```
4010 PRINT AT 5,14,"YOU HAVE FOU  
ND A",TAB 14,"ZOLTON GUARD",TAB  
14,"GET READY TO ENTER",TAB 14,"  
A NUMBER FROM",TAB 16,"(1 TO 5)"  
4020 FOR C=1 TO 120  
4030 NEXT C  
4040 FOR D=1 TO INT (RND*6)+5  
4050 LET D=INT (RND*5+1)  
4060 IF RND<.1 THEN PRINT AT 12,  
15:"HE DOES",D  
4070 PEEK 16436+255  
4080 PEEK 16437+255  
4090 IF INKEY$>STR$ D OR (65536-  
(PEEK 16436+256*PEEK 16437))/50>1.5 THEN LET STRENGTH=STRENGT  
H-D*10  
4110 LET C  
4120 GOTO C 200  
4500 LET D=INT (RND*7+1)  
4510 IF D<7 THEN LET D=INT (RND  
*7+1)  
4520 IF D<7 THEN GOTO 500  
4530 PRINT "YOU HAVE ENTERED A R  
CONTAINING A MATTER  
TRANSPORTER."  
4540 LET D=INT (RND*5)+1  
4550 IF C+1>LEVEL THEN GOTO 4540  
4560 LET LEVEL=LEVEL+1  
4570 PRINT "YOU HAVE BEEN ADVISE  
DATED TO LEVEL"  
4580 GOTO 140  
5000 LET C=5  
5010 LET D=INT (RND*5)  
5011 LET C$="(WARLOCK" AND 0=0)+  
("CENTAUR" AND D=1)+("ROC" AND 0  
=2)+("GRAYPHON" AND 0=3)+("HYDRA"  
AND 0=4)  
5020 PRINT "YOU ARE FACED BY A "  
C$  
5030 PRINT AT 10,0,"-----"  
5040 LET O=9  
5050 LET E=INT (RND*3)+1  
5060 INPUT B$  
5070 IF VAL B$=E THEN LET D=0+2+  
(RND*5)  
5080 IF D>19 THEN LET D=15  
5090 IF VAL B$=E THEN LET D=0-E  
5100 IF D<0 THEN LET D=0  
5110 PRINT AT 10,1,"-----"  
5120 LET D=D+1  
5130 IF D=0 AND D=18 THEN GOTO  
6050  
5130 IF O=0 THEN LET STRENGTH=ST  
RENGTH-50+E  
5140 IF D>0 THEN PRINT "YOU HAVE  
DESTROYED THE",C$  
5150 GOTO 1500  
5500 PRINT "YOU ARE UNDER ATTACK  
BY ROBO GUARDS."  
5501 PRINT "USE KEYS 5,8 AND 0"  
5510 FOR C=1 TO 200  
5511 NEXT C  
5512 CLS  
5515 LET S1=CODE " "  
5520 LET A1=S1  
5530 LET U1=A1+A1  
5540 FOR C=U1 TO CODE "E" STEP  
05  
5550 PRINT AT C,AND*CODE "?",,"
```



```

5560 LET A1=A1+(INKEY$="B")-(INKEY$="S")
5570 IF A1<U1 THEN LET A1=U1
5580 IF INKEY$="0" THEN GOTO 565
5590 PRINT AT CODE "$",A1-U1," I

```

```

5600 NEXT C
5610 LET STRENGTH=STRENGTH-100-I
  (RND*100)
5620 PRINT "ONE OF THEM GOT YOU.

```

```

5630 GOTO 1500
5650 FOR D=11 TO C-CODE "-" STEP
  -U1

```

```

5670 PRINT AT D,A1;
5680 IF PEEK (PEEK 16398+256*PEEK
  16399)=CODE "-" THEN LET S1=S1
  +5

```

```

5690 IF S1>155 THEN GOTO 1500
5700 PRINT AT D,A1;" "
5710 PRINT AT D,A1;" "
5720 NEXT D

```

```

5730 GOTO 6000
7000 IF B$="YES" OR B$="NO" THEN
  RETURN

```

```

7010 PRINT AT 21,0,"TYPE IN YES
  OR NO"

```

```

7020 INPUT B$
7030 PRINT AT 21,0,"

```

```

7040 GOTO 7000
7050 IF B$="NORTH" OR B$="EAST"
  OR B$="SOUTH" OR B$="WEST" THEN
  RETURN

```

```

7060 PRINT AT 20,0,"TYPE IN NORT
  H,SOUTH,EAST OR WEST"

```

```

7070 INPUT B$
7080 PRINT AT 20,0,"

```

```

7090 GOTO 7050
7100 CLS

```

```

7110 PRINT "YOU HAVE GAINED CONT
  ROL OF THE COMPUTER AND MADE IT
  PRINT OUT THE INFORMATION YOU
  NEED. THE SPY YOU WANT IS "

```

```

7120 FOR C=1 TO 100
7130 PRINT AT 3,16;"",AT 3,16;"

```

```

7140 NEXT C
7150 PRINT

```

```

7160 PRINT "STRENGTH.";STRENGT
  H

```

```

7170 STOP
8000 LET A=S
8005 LET RA=1

```

```

8010 LET B=INT (AND*S+1)*100+164
  14

```

```

8015 LET D=1
8016 LET E=1

```

```

8017 LET KEY=INT (RND*5+1)
8020 FOR C=B TO B+9

```

```

8030 LET A$(D,E)=CHR$ PEEK C
8040 LET E=E+1

```

```

8050 IF E=11 THEN LET D=D+1
8060 IF E=11 THEN LET E=1

```

```

8070 NEXT C
8080 LET A$(A,RA)="-"
8085 LET HC=0

```

```

8090 RETURN
8100 CLS

```

```

8110 PRINT TAB 12,"ZAX""S U",TAB
  12,"=====

```

```

8115 PRINT " YOU ARE A FEDERAT
  ION LAW MAN YOUR JOB IS TO TRAVE
  L TO THE PLANET ZAX""S U AND
  FIND OUT THE IDENTITY OF THE DOU
  BLE AGENT WHO IS SELLING FEDERATI
  ON SECRETS TO THE MONOTRONS."

```

```

8120 PRINT " THE IDENTITY OF T
  HE AGENT IS HIDDEN ON THE TOP FL
  OOR OF A 10 STORY BLOCK OF FLATS
  -EACH FLOOR HAS FIVE ROOMS AND R
  -LIFT ON IT."

```

```

8130 GOSUB 9000
8140 PRINT TAB 5,"KEY";TAB 5,"

```

```

8150 PRINT "THE ROOMS.....(1.
  TO 5)";"THE LIFT.....(2)";"
  OU.....(3)";"THE PASSAGES

```

```

8160 GOSUB 9000
8170 PRINT TAB 12,"THE LIFT";TAB
  12,"

```

```

8180 PRINT " ACROSS THE FRON
  T OF THE LIFT ARE SOME METAL BAR
  S. ON EACH LEVEL IS A KEY TO
  REMOVE THE BARRS. THE BARRS ARE
  ELECTRIFIED SO TRY NOT TO GO P
  ASSED THE LIFTWITHOUT THE KEY. O
  NCE IN THE LIFT YOU HAVE TO T
  RIT 25 SECONDSFOR THE NEATED FLO
  OR TO RE NACE

```

```

8190 GOSUB 9000
8200 PRINT TAB 9,"THE TOP FLOOR"
  ";

```

```

8210 PRINT " ON THE FLOOR IS
  A COMPUTER WHICH WILL TELL YO
  U THE AGENTS NAME,BUT BEFORE YO
  U GET THE NAMEYOU MUST DISARM A
  BOMB.FIRST YOU MUST FIND THE BOMB
  ON A 10*10 GRID (THE LOWER TH
  E NUMBER THE NEARER YOU ARE).TH
  EN YOU MUST ENTER THE CODE NUM
  BER."

```

```

8220 GOSUB 9000
8230 PRINT TAB 9,"ZOLTON GURPDS"
  ";

```

```

8240 PRINT " WHEN YOU ARE AT
  ZOLTON GUARD THE G
  JARD WILL DO AN ACTION FROM 1 T
  O 5 AND YOU MUST PRESS THE SRM
  E KEY TO PROTECT YOUR SELF.
  (YOU MUST BE QUICK)."

```

```

8250 PRINT " HIT TO HEA
  D"
8260 PRINT " PUNCH BODY"

```

```

8270 PRINT " STRIKE LEGS"
8280 PRINT " CUT ARMS"

```

```

8290 PRINT " STAB WITH KNIFE"
8300 GOSUB 9000

```

```

8310 PRINT TAB 12,"MONSTERS";TAB
  12,"

```

```

8320 PRINT " WHEN YOU ARE SHOWN
  THE PICTURE BELOW YOU MUST ENT
  ER A NUMBER FROM 1 TO 3.THIS M
  OVES ALONG THEFIRE BALL"

```

```

8330 PRINT " YOU"
8340 PRINT " THE MONSTER"

```

```

8350 PRINT " THE FIRE BALL"
8360 GOSUB 9000

```

```

8370 PRINT TAB 14,"FOOD";TAB 14;
  "

```

```

8380 PRINT " YOU START OFF WITH
  A STRENGTH OF 1000 AND CAN GET M
  ORE BY EATING FOOD.BUT SOME OF T
  HE FOOD YOU WILL FIND IS POISY
  ONED AND THIS WILL MAKE YOU STR
  ENGT OF 0 THENYOU LOSE."

```

```

8390 GOSUB 9000
8400 PRINT " TUNNELS";TAB
  13;

```

```

8410 PRINT " YOU CAN DIG TUNNEL
  S BUT THIS USES UP SOME STREN
  GTH( NOT MUCH)."

```

```

8420 PRINT " TAB 11,"
8430 GOSUB 9000

```

```

8440 GOTO 70
8450 PRINT " YOU HAVE R STRENGTH
  YOU HAVE DIED WHILE
  ON THE MISSION.YOU HAVE FRI
  LED. YOU REACHED LEVEL:"

```

```

8460 PRINT " LEVEL 9 THEN PRINT "ONLY
  10 LEVEL." FLOORS TO GO."

```

```

8470 STOP
8480 PRINT "

```

```

8490 PRINT "
8500 IF INKEY$="" THEN GOTO 901

```

```

8510 IF INKEY$="" THEN GOTO 9020
8520 CLS

```

```

8530 CLS
8540 RETURN

```




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DRAGON 32

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Short of ideas for games? Then why not try to pick the brains of science fiction authors. *C&VG's* very own sci-fi author, David Langford is back in action this month, suggesting books which might provide ideas as well as coming up with an unusual Tandy listing. Read on as, through the customary Langford humour, a stellar horror rears its ugly head in the . . .

Attack Of The Galactic

Looking at computer games from the weird and twisted viewpoint of a science fiction writer has now resulted in a camel. Why a camel? Ahh, be patient, be patient.

SF authors are traditionally fond of mathematical or scientific tricks and games — anything to baffle and amaze the readers. In the last year I've had an overdose of the traditional physics of space travel and supernovae and black holes, thanks to writing reams about these things for two novels. But you don't see so much pure mathematics in SF.

Of course there are exceptions.

Rudy Rucker's *White Light* is a novel all about mathematical infinity, full of peculiar number-theory jokes. At one point the hero has to open a combination lock whose code number is π , and he stands there entering the digits 3.14159265358979 . . . and so on all the way to infinity!

Piers Anthony keeps sticking mathematical ideas into his oversized SF novels — the worst outbreak being in *OX*, which tries ineffectively to use the game of "Life" as a plot device, to the bafflement of most readers. And writers like Barrington Bayley and Jorge Luis Borges are very fond of

boggling you with strange mathematical philosophies.

Borges' *The Book of Sand* features a book with an infinite number of pages, while Bayley's *The Radius Riders* proves conclusively that there's more space inside the Earth than there is outside.

Some mathematical problems are deceptively simple. The famous four-colour problem was to prove that any map you draw can be coloured, using no more than four colours, so that no two adjacent countries on the map are coloured the same. Sounds simple. The 1976 proof ran to 900 pages and

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Have you ever bought a program that failed to live up to its promises?

Worse still a computer which defied the advertisement copy and refused to reveal its secrets even refused to turn up for four months.

Computer people are traditionally slow to complain, they expect to be kept waiting and they've been reared on promises and lemming deers that turned into "early production difficulties" and distribution problems.

But the C&VG postbag is gradually swelling with complaints from readers and the feeling is that while most computer manufacturers are now making an effort not to mislead prospective purchasers, some software houses are still not living up to their promises.

Sooner or later the wheat will be sorted from the chaff but to speed that day along, C&VG is going to come down hard on cassettes and cartridges which are not up to standard.

But we need your help. If you have bought anything from the computer industry which has really made you angry then put your thoughts on paper.

The column is titled "Great Software Disasters" but you can write in about computers (as Keith Ollott has done this month) peripherals, computer books, or anything which has angered you.

For further details on how to make your views felt read the panel below.

It may sound as though Great Software Disasters is going to be the most distinctive page so far unleashed on the computer industry. But my hope is that it will be welcomed by these software houses who are striving to keep quality high.

Those who have confessed to me in quiet corners that they do release the odd bad game because they know some unscrupulous nival would make a fortune from it if they turned it away.

Those manufacturers who believe bad software or peripherals reflect on their computer.

And those of you who have suffered.

Aeirc Bloodaxe is a delightful way to start off this column, because it ransoms some hard-hitting criticism with humour and the feeling that Keith is going to end up very close to Aeirc in the end.

One top deserve credit for their positive response to the piece and the help they have since offered Keith.

If you have a genuine grievance about any computer industry product write in to Great Software Disasters, Computer & Video Games, Bennett House, Herby Hill London EC1R 5JB.

We can only publish your comments if you give us a name and full address. A phone number may help and the offending tape or article despatched will enable us to fast it for ourselves but this is not necessary.

We insist that the criticised company be given a chance to reply to the criticism before we publish.

The Bloodaxe Of AEIRIC BLOODAXE

OR LEARNING TO LIVE WITH AN ORIC

Ernest Paabrain was a ZX81, he lasted about four months, changed his name to Beanbrain when he was expanded to 4K and is on permanent sabbatical leave giving novices Hands On Experience. I never ask what he gets out of it.

Jezebel came next, a 48K Sharp MZ-80K, she has lasted about 16 months. Hers is the keyboard I know best, for all its clatter. At the last count, I had about six Basic dialects and three Fort. Jezebel has everything I want from a computer except a decent keyboard, colour and three channel sound.

I admit I was beguiled by the Oric ads, the teaser articles in the computer press merely heated my ardour. Be still my dancing pulse! So, in late October, I ordered one. Well, the royalties Jezebel had earned me would pay for it.

In calmer moments, I mused on the long and honourable pedigree of Tangerine, no new hot shot outfit this, sound expertise I thought, sound financial backing, I thought.

By now, your ears will have been filled with the woeful tales of those

who are waiting for Oric. The sleepless nights, the phone engaged for days on end, the bedwetting, the eternal promise of delivery next week, the damnable "Fur Elise" everytime the Oric switchboard put me on Hold.

Friends jeered at me in the street, "Has Eric arrived yet?" I lost my appetite, stopped shaving, wore the same tee two days in a row, my work was suffering.

On February 19th, Eric arrived. The time since then has not been dull. Because of the placid and predictable nature of the Oric Extended Basic (v 1.0), Eric was soon changed to Aeirc Bloodaxe, somehow the name seems more appropriate.

It is my firm opinion that those who produce user manuals without indexes should be smothered at birth, or at least debarrered from the company of honest and trusting folk. Compassion for the less privileged forbids me from offering an opinion on those who punctuate manuals with infantile and unhelpful cartoons. Two sheets of errata accompanied the manuals.

The machine itself is a sturdy thing, not unpleasant to the eye, which makes it both useful and decorative. The keyboard has an unique feel (tactile feedback) and is optionally noisy; sadly, some keys are marred by a tendency to remain depressed.

From cold start or power on or whatever, you eventually get a little message that tells you that you have ORIC EXTENDED BASIC V1.0 and there are 47870 BYTES FREE, if you enter PRINT FRE(0), you get 39421, which I am assured is the amount of memory available in bytes, but if you enter GRAB followed by PRINT FRE(0) you still only get 46588 bytes free and I thought this was supposed to be a 48K machine (which, according to my abacus, is 49152 bytes). Someone has been misled.

It is a sad comment on Life or Death or something, that the April issues of some computer magazines are still carrying advertisements which promise 16 colours on a 16K machine delivered in 28 days and while I'm at it, is it honest to describe 240 x 200 pixels as high resolution?

Oric Basic is an idiosyncratic little dialect, related on the distaff side to Microsoft. In some respects it is a lazy and sensuous thing, it does not insist on LET for variables, or arrays of less than 10 to be DIMmed, and will quite happily accept PRINTING without semicolons.

You may have read that PLDT replaces PRINT AT but this is not so

PLOT is a wiper of a command which will creep into your tent if you let it.

It is not easy to predict in which of the eight colours it will print a string, unless it is numeric, then it will be any colour you like (as long as you like green).

The STR\$ command is a joy and a delight. Get it to produce a string from an integer between 1 and 9 and it will produce a string two characters long! The first character being the decimal CHR\$(2) and the second your precious number, even if you prune off the decimal CHR\$, you will still turn green when you PLOT. Could a mere BEEB boast such sophistication?

Getting Aelric to produce all eight colours of foreground and background AND use double height and flashing characters is a challenge to the intellect perhaps equalled only to playing Towers of Hanoi while blindfolded and wearing boxing gloves.

Incidentally, the Oric does not boast the full Teletext Alphamosaic character set. **WARNING:** Teletext marks on the casing may invalidate the guarantee.

The SOUND, MUSIC and PLAY commands offer great scope for investigation. The *Sound* chapter of the manual is one of the more Byzantine chapters, omitting to give any examples of the SOUND command.

Although there are three music channels spanning a magnificent six octaves it is not easy to get each music channel to do something different to the other two. Well, actually you can get it to do this once or twice, but you might be better employed with the screen display or playing Towers of Hanoi than attempting a three part arrangement of *Jesu, Joy of Man's Desiring*.

Which is a pity, as I was looking forward to it. The on-board loud-speaker was very loud and turned the screen into porridge whenever it ZAPPED or PINGed, sadly it turned dumb after three days, but it still blasts away through the Hi-Fi and I can control the volume on that.

There is a current fashion for neat pot Basic (i.e. Structured Basic) as opposed to shambler Basic (what I write). There is a whole chapter devoted to this in the manual. Somehow I feel they would have been better employed compiling an index. Structure is fine if you have a BEEB or an MZ-80K with Hudson MegaBasic, but if your line length is restricted to around 80 characters you will be herded pushed to produce a sizeable program which is truly structured and running efficiently.

I still maintain that the most useful

programming tool is a large piece of paper and a pencil with a rubber on the end of it. It will be interesting to see the promised BBC-type Basic, will it be a true Structured Basic or just a less hastily produced Microsoft type perhaps with WHILE WEND.

There are a number of reserved words buried in the Basic but not mentioned in the manual, one begins JO and an INVERSE lurks in there somewhere.

The omission of VERIFY is almost criminal, given Aelric's unreliability when saving programs even at 300 baud (super safe), and the lack of file writing reading commands will surely place immense restrictions on its applications.

I am frankly disappointed in the Oric. Its Basic seems a hastily produced thing, as is the manual. The advertising and brochures have been misleading and at times dishonest. The telesales staff have had to spend months covering for this ill-conceived product by promising delivery soon.

I could not in honesty recommend this machine to a beginner and an experienced user would be better advised to buy a more thoughtfully produced and supported product, even if he or she would have to buy a decent keyboard, or save up for something further up market.

CRITIC OF CODE: There is a manufacturer of popular home computers capable of honest publicity and realistic delivery dates?

Dear Mr Otlett
I'm glad to say that things have changed since you wrote your piece about Aelric: no delivery problems and the manual is improved too (not least by the addition of an index).

Oric have asked us to suggest that the best way of dealing with the problems you are experiencing is to make an appointment to see sales director Peter Harding. Now that they have closed down the mail order operation, you'll find it is child's play getting through to them. Just in case you need reminding the number is Ascot 27686 or 27575.

If anyone else has Oric problems, please send the machines back to Oric (if purchased from them) for servicing (PO Box 162 Cambridge CB4 1PH) — obviously this only applies to mail order customers. Anyone with a fault on an Oric bought in a shop should send it or take it back to where it was purchased with the request that it is tested by that company's experts and, if necessary, returned to Oric via them.

Our thanks for cheering up post-opening time. Mr Otlett we do hope you come to love and enjoy Aelric Bloodaxe.

Judith Patten
On behalf of Oric.



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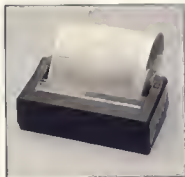
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RULES OF COMBAT

Prior to combat, the attacker and defender are awarded points.

1. They are allocated points as described in Part 2, including points for being adjacent to the General.
2. Pieces behind a boulder are awarded an extra point at the three hex range.
3. Pieces close to a boulder which is not exactly between the attacker and defender may or may not receive an extra point.
4. Garrison walls are similar to boulders and provide the same cover.

COMBAT TABLE

To determine the outcome, the computer selects a number from one to six for the attacker and for the defender if he is returning the fire. If he is not returning the fire, the defender is given one point. To these scores are added the points awarded above. The outcome is shown in the table.

WARPATH PART 7 — COMBAT

[illegible]

DEFENDER ELIMINATED: Attacker scores more than 6.

ATTACKER ELIMINATED: Defender scores more than 8.

DEFENDER RETREATS: Attacker scores 4 or 5, defender scores less.

ATTACKER RETREATS: Defender scores 4 or 5, attacker scores less
BOTH MISS: Any other scores.

OUTCOMES

A-RET:- The attacker is forced to retreat 1 hex away from the direction of the defender. The directions in which the attacker may move are shown at the bottom of the screen. If none is available, the attacker is eliminated automatically.

If the combat was at 1 hex range, the defender will flicker "ADV". If "Y" is pressed, he may move into the hex vacated by the attacker. The following rules apply with regard to the Flag:

- 1) If the attacker occupies the Flag hex, he must retreat without the Flag.
- 2) The defender may advance into the empty Flag hex. This must be a winning condition since only an in-

3) The General or a Trooper may retreat into the Flag hex; Indians may not.

4) The man occupying the Flag hex may advance with the Flag.

A.ELM. The attacker is eliminated and removed from the map. The defender may advance as described above.

BOTH:- The attacker and the defender are removed from the map.

D-RET:- The defender is forced to retreat as described above and the attacker may advance.

D-ELM: The defender is eliminated and removed from the map. The attacker may advance.

This completes the rules.

```

1290 L=L+1;NEXT I;PEEK(I*76)+64;RETURN
1291 IF(7)THESE2=2;THEN=CORR(L+1);C="MM";GOSUB(40);GOT(32)
1300 C="MM";GOSUB(44);IFA=C#(13)C(F7)THEGOSUB(49);GOTO(3)NE
L;GOTO(15)
1310 IFA="W"ORA=C#(L-1);THEN=GOSUB(46);GOTO(30)
1320 PR=7#(ASC(A)-55)/47;IPEEK(19*5)=1;THEN=GOSUB(49);GOTO(3)NESE
TO=PEEK(19*51);GOSUB(60)
1330 A="REPL";I=1;Y=1;PRINT(50);**I;I=PCD;Z=2;THEN=CORR"CAN"TH
Y=1;GOTO(4)ELSE I=7;IF(7)THEIN"JUST"AI;GOTO(3)ELSE I=7;Z=2;THEN=CORR"TONA
HMS"CAN"THAI;GOTO(36)
1340 C="RTM";GOSUB(44);IFA=C"Y"THEN=Y+1;GOTO(36)
1350 GOSUB(34);GOSUB(28)PCD(7,2)=1;Y=H#(1)
1360 GOSUB(35);HL=H#(1);GOSUB(28)Z=H#(1)
1370 R2=6-VAL(H#(H#(C4,Y)+PR(C4,1)));I=1;PRINT(50);"RESUL1:";I;G
OSUB(72)
1380 GOSUB(58)
1390 OMRGOSUB(46);H,1436,1440,1450,1460,1480
1400 BL=H#(1);PRINT(832);C#(3);GOTO(4)B#
1410 GOSUB(35);GOSUB(17);IF(7)THERETURN
1420 GOSUB(34);GOTO(34)
1430 GOSUB(35);GOSUB(51);GOTO(4)2#
1440 RETURN
1450 GOSUB(34);GOSUB(15);GOTO(47)
1460 GOSUB(34);GOSUB(17);IF(7)THERETURN
1470 GOSUB(35);GOTO(15)0
1480 GOSUB(35);GOSUB(67)
1490 GOSUB(35);GOTO(7)0
1500 IPEEK(19*4)=C(1);THERETURN;SE;GOSUB(25);GOSUB(18)C="MM";GOS
UB(44);IFA=C"Y"THEN=Y+1;GOSUB(25)Z=1;Y=H#(5);I=PCD(4);H=H#(1);(
1510 A="Y"=H#(1)-7);GOSUB(19)GOSUB(34);GOSUB(41);GOSUB(35);HL=H#(7);(
1520 A="I"=H#(7)-26)THEN=H#(1)-7);GOTO(3)HEL;RETURN
1530 GOSUB(40);GOSUB(58);GOSUB(20);IFA=3;THEN=HEL;ELSE I=2;THEN=H
L;GOSUB(40);GOTO(15)0
1540 GOSUB(44);GOSUB(15);IF(7)THEHEL;52#
1550 GOSUB(45);PR(C4,1)=H#(5)PVEY;Z=1;PVEYZ;MM;GOSUB(41);GOSUB(18)
2#(GOSUB(35)R2=1;GOTO(4)0
1560 REM Not Used.
1570 REM Not Used.
1580 IF(2)=3;THEN=PRDTE(1);(ELSE I=(R=4)OR(R=5)THEN=PRDTE(1);(
1590 IF(4)=3;THEN=PRDTE"MISS"HEL;ELSE=6;THEN=PRDTE"BOT"1;E(2);(
1600 IF(R=5)=1;THEN=R=5;THEPRDTE(2);(
1610 IF(R=1)OR(R=4)THEN=PRDTE"RETREAT"1;
1620 GOTO(24)

```


THE Happy Hunting Grounds or Boot Hill get ready to receive casualties when the computer goes into its combat routine. In the final article in this Warpath series, we look at how the computer analyses a battle.

Last month I left you halfway through the combat sequence and slightly up in the air.

Prior to that, you had always been able to type in the code and at least be able to check it by running the program. Last month this was not possible.

The search routine is called in line 1230 and it may be wise to omit the statement K9=USR(0), while you test the rest of the program.

When writing the routine I had to set up very elaborate routines to debug it.

Normally, these consist of first, getting the code under control —

that is, looking for the silly errors that clobber the whole of memory — and secondly, ensuring that the logic is correct.

It helped a great deal to write the code in Basic first and then translate it.

Note that the attacker is given subscript 1 and the defender subscript 0. First, Y is set to 1 and all attacker information is saved. A similar set is then prepared for the defender i.e.:

Having decided whether the de-

Attacker	Defender	
KB(1)	KB(0)	IBOARD location
KS(1)	KS(0)	Video location
KT(1)	KT(0)	Character type
C(1)	C(0)	Character
KV(1)	KV(0)	Memory location
KQ(1)	KQ(0)	"Man in Flag hex" flag.

The figure below describes the lines within the Combat sequences. Follow this through with the coding. Lines 1320 to 1600, however, require more explanation.

Once an attack has been determined, a table is set up (see lines 180 and 50).

fender will (or can) return fire, the combat points are calculated (See line 280), N(Y) accumulates the points. RANGE (in Basic) is used to test whether a trooper is next to the General for an extra point.

Note also how Y is used to calculate who gets the benefit of cover.

WARPATH

Ron Potkin takes to the Warpath for the last time and deals with the rules of combat (left) and the final piece of programming. If you have had any problems with the series please write in.

Figure 1

```

740 : Clear attack flags. Obtain location of each piece in turn. GOSUB
COMBAT.
1230:40 COMBAT : Display WINDOW. Put index in SK, SP into SS and BL in
SB and call XS(16) — RANGE. If there are no attackers, return for next piece.
Calculate K7 — number of defenders at 1 hex range. If zero and man is a
tomahawk, attack is not possible — return.
1250:60 LETTER : Print letters against defenders, but make sure tomahawks
only light at one hex.
1290 AUTO : If there is only one attack at 1 hex (variable L2) combat is
automatic so prompting is not necessary. Goto TEST.
1300:1310 WHO : Flicker for decision and check input.
1320 TEST : Test input some more and set up table.
1330 REPLY : If defender has already fired or he is a tomahawk being
attacked at greater than 1 hex range, he cannot reply. If distance is 1 hex,
others must reply.
1340:50 RTN : Prompt for return of fire. If he returns, determine his defence
points and set attack flag in PTABLE so that he cannot reply again.
1360 : Calculate attacker's points.
1370 ODDS : Calculate result using C4 — the ODDS table.
1380 : Remove letters from screen.
1390 : Whatever will be will be.
1400 : Update BIGSCREEN and return to line 740.
1410 A-ELM
1430 A-RET
1440 MISS
1450 O-RET
1460 D-ELM
1480 BOTH eliminated.
1500 ADVANCE: If 1 hex range, winner may advance.

```

Finally, line 300 prints the points on the screen and adds to N(Y) a random number from 1 to 6.

We can now calculate the result using the ODDS table, C4, and print it on the screen using the routine at 1700.

The elimination in lines 1410, 1460 and 1480 are handled by subroutine 170. Retreats are carried out by line 1510. These are again controlled by Y=0 or Y=1.

Thus is the seventh and last in the Warpath series. When you have entered this month's code, you will have a working game up and running, ready for you to take over either the cavalry or the Indians and lead them to victory against your computer.

You will also have a complete set of rules and hopefully a full knowledge and understanding of the workings of this program.

Warpath has been in such detail so you can convert it to your own machine and you can take elements of the listing and use them in your own wargames.

It has been fun writing this series and I hope you have enjoyed following it.

MACHINE CODE

CALLING ALL THOSE GOSUBS!

Planning a series of GOSUBS which call one-another up is usually one of the first lessons and early thrills of Basic programming.

But how does a machine code program find its way through the GOSUBS and RETURNS which still make up a large chunk of every program?

Last month I looked at the idea of using the subroutines built into the computer's ROM. This article will tackle assembly language instructions associated with subroutines and the mechanism used by the microprocessor to keep track of subroutine calls and returns.

The instructions for subroutine calls and returns in machine code work similarly to Basic but the call is to a memory address instead of to a line number.

Executing a subroutine call makes the microprocessor continue execution with the instruction at the address specified in the call instruction, and a return instruction makes the microprocessor go back to the instruction following the subroutine call.

The 6802 has only one subroutine call instruction, JSR, which can be used only with absolute addressing, and a corresponding return instruction, RTS.

The 6809 has three subroutine call instructions: BSR and LBSR, which are used with relative addressing and take one-byte and two-byte offsets respectively; and JSR, which can be used with extended, direct page, and all indexed addressing modes. The return instruction is RTS, but there is also another way to perform a return, which we will look at later.

The Z80 subroutine call instructions all use absolute addressing. The instructions available are:

CALL address (call unconditionally)

CALL NZ, address (call if Non-Zero, i.e., if Z flag set)

CALL Z, address (call if Zero, i.e., if Z flag set)

CALL NC, address (call if No Carry, i.e., if C flag clear)

CALL C, address (call if Carry, i.e., if C flag set)

CALL PO, address (call if Parity Odd, i.e., if P/O flag clear)

CALL PE, address (call if Parity Even, i.e., if P/O flag set)

CALL P, address (call if Positive, i.e., if S flag clear)

CALL M, address (call if Minus, i.e., if S flag set)

When you use the conditional CALL instructions the subroutine will be executed only if the relevant condition is satisfied, otherwise the processor will skip to the next instruction after the CALL instruction.

The Z80 also has a similar set of return instructions:

RET

RET NZ

RET Z

RET NC

RET C

RET PO

RET PE

RET P

RET M

STACKING IN STRUCTURE

In order to be able to get back to the right instruction after executing a subroutine the microprocessor has to save the return address somewhere. The 6802, 6809 and Z80 all use the same principle for saving the address, but the details differ.

The method for saving return addresses uses a data structure called a stack, in which new items are always put onto the end of the stack and stored in the order they were put, or pushed, onto the stack, and items taken, or pulled, from the stack come in the reverse order to which they were pushed. This allows subroutine calls inside subroutines to work properly, with a return always going back to the instruction following the last subroutine call executed.

The terminology for a stack can be confusing; the last item pushed onto a stack is called the top of stack, but the three microprocessors add to the stack downwards in memory, so the "top of stack" is actually at the lowest address.

When a subroutine call is executed the microprocessor stores the return address in the two bytes at the address referenced by the Stack Pointer register (SP in the 6802 and Z80 and S in the 6809), and

decreases the Stack Pointer by two. A return instruction does the opposite, increasing the stack pointer by two and putting the two-byte return address into the Program Counter.

The three microprocessors also have some instructions that may be regarded as special types of subroutine calls.

The 6802 instruction BRK (Break) saves the return address and the status register on the stack, and jumps to the address stored in addresses \$FFFE and \$FFFF.

The 6809 has three "Software Interrupt" instructions, SWI, SWI2 and SWI3, that save the return address and all the processor registers except Stack Pointer S on the S stack and then jump to an address stored in high memory. SWI jumps to the address stored in \$FFFA and \$FFFB, SWI2 jumps to the address stored in \$FFF4 and \$FFF5, and SWI3 jumps to the address stored in \$FFF2 and \$FFF3.

The Z80 has the "Restart" instructions RST 0, RST 8, RST 10H, RST 18H, RST 20H, RST 28H, RST 30H, RST 38H, which are equivalent to CALL 0, CALL 8, etc., but use only one byte instead of the three bytes for a CALL instruction.

On ROM based computers the addresses used by these instructions will be in the ROM and will have been set up by the manufacturers. To use the instructions you will have to find out how they have been set up, either from the manual or from books and magazine articles on specific computers.

As well as the stack being used automatically to keep track of subroutines there are instructions that allow you to push the processor registers onto the stack and pull from the stack into the processor registers.

The 6802 has PHA, which pushes the accumulator onto the stack, PLA, which pulls the top of stack into the accumulator, PHP which pushes the status register P onto the stack, and PLP which pulls the top of stack into the status register.

The 6809 has two Stack Pointer registers, the hardware Stack Pointer S which is used for subroutines and interrupts, and the User Stack Pointer U. The push and pull instructions are PUSL, PULU, PSHS, and PSHU, and the mnemonic must

be followed by a list of the registers to be pushed or pulled. Any combination of registers except the stack pointer for the stack being used may be pushed or pulled in one instruction. For example, we can have

```
PSHS A
PUSH CC,PC
PSHU PC,Y,X,DP
PULU A,B,Y
```

The order the registers are pushed onto the stack is PC, U or S, Y, X, DP, B, A, CC, and they are pulled in the reverse order. Although the assembly language allows you to list the registers in a push or pull instruction in any order the actual push or pull order is always the same.

Note that including PC in the operand of a PULS instruction to pull a subroutine return address into the program counter does exactly the same as a RTS instruction, and this programming trick is often used to save putting in the RTS instruction.

The Z80 push and pull instructions all work with two bytes at a time. The instructions are PUSH BC, PUSH DE, PUSH HL, PUSH AF, PUSH IX, PUSH IY, POP BC, POP DE, POP HL, POP AF, POP IX, POP IY.

When you are using subroutines and push and pull instructions you have to be careful to balance the number of bytes pushed and pulled between the execution of a subroutine call and the execution of the return. For example, if you begin a subroutine by pushing two bytes onto the stack and pull four bytes off the stack before the return, the extra two bytes will be the return address and when the return instruction is executed the processor will jump to whatever address happened to be in the two top bytes of the stack before the last subroutine call. We can now go back to last month's "print a message" routines.

These routines were not written to be used as subroutines, so if you wanted to print several messages in a program you would have to repeat the whole code every time. As well as changing the routines so they can be used as subroutines there are other improvements.

The 6502 and Z80 routines last month were rather complicated as the 6502 does not have any 16-bit

registers and the Z80 does not have any 16-bit compare instructions

The routines can be made much simpler by marking the end of each message with an "O" instead of providing the length of the message. With these changes the "print a message" routines, where the message may be of any length, become:

```
6502
Calling sequence
MESSHI = MESSAGE/256
MESSLO = MESSAGE-256-
*MESSHI
LDA MESSLO
STA MESSAD
LDA MESSHI
STA MESSAD+1
JSR PRMESS
....
"Print message" subroutine:
PRMESS LDY O
NEXTCH BEQ DONE
JSR OUTCH
INC MESSAD
BNE NEXTCH
INC MESSAD+1
JMP NEXTCH
DONE RTS
```

```
Z80
Calling sequence:
LD HL,MESSAGE
CALL PRMESS
....
"Print message" subroutine
PRMESS LD A, (HL)
RET Z
CALL OUTCH
INC HL
JR PRMESS
```

```
6809
Calling sequence
LDX MESSAGE
JSR PRMESS
....
"Print message" subroutine
PRMESS LDA ,X+
INC HL
JR PRMESS
```

```
6809
Calling sequence
LDX MESSAGE
JSR PRMESS
....
"Print message" subroutine
PRMESS LDA ,X+
INC HL
JR PRMESS
```

```
BNE DONE
JSR OUTCH
BRA PRMESS
```

DONE RTS

There is another point that was skimmed over last month. We assumed that the routine OUTCH, which prints the character whose code is in the accumulator will not change the contents of registers.

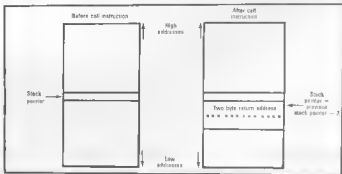
This is true in many computers, but not in all. However, we can ensure that none of the registers are changed by saving the registers on the stack before calling the ROM routine and restoring them afterwards. If we call the ROM routine that prints the accumulator PRINTA we can write OUTCH routines that preserve the registers as follows:

```
6502
OUTCH PHP
STA TEMP PLA
TXA TAY
PHA PLA
TYA TAX
PHA PLP
LDA TEMP PLA
JSR PRINTA RTS
```

```
Z80
OUTCH PUSH AF POP IY
PUSH BC POP IX
PUSH DE POP HL
PUSH HL POP DE
PUSH IX POP BC
PUSH IY POP AF
CALL PRINTA RET
```

```
6809
OUTCH PSHU Y,X,DP,D,A,CC
JSR PRINTA
PULU CC,A,D,DP,X,Y
RTS
```

Note that we do not need to save S as the ROM routine must leave S unchanged after a subroutine call and return, and that we can put D in the push/pull list instead of A and B



THE SEVEN

CHECKLIST TABLE

Compare new star to the star you left

Moving orders

MOVE	Does it belong to a friendly empire? Is it 1 square away, either vertically horizontally or diagonally?	Is it the first movement phase?
TRADE	Does it belong to a friendly empire? Is it 1 square away, either vertically horizontally or diagonally? Is it a different star type?	Is it followed by a Return order?
RAID	Is it 1 square away, vertically or horizontally but not diagonally?	Is it the second movement phase?
RETURN	Is the fleet returning to a star belonging to the same empire as it left on the first movement phase?	Does it follow a Raid order?
ATTACK	Does it belong to an enemy empire?	Is it a first movement phase, or is it followed by a Stay order?
STAY	Is fleet staying at present star?	Was your first order anything but a Raid order?
CARGO JUMP AND PLUNDER	Does fleet start game turn at a Gateway Star?	Has it only one order over both movement phases?
	Does it move to a Gateway Star?	Is the other movement phase crossed out?
	Is it a different Gateway Star?	

Friendly = Empire which a fleet's current empire is at war with

Enemy = Empire which a fleet's current empire is at war with

Same = Same empire as the one you've left

Alien = A star belonging to an empire other than the one you left

The Checklist Chart is one way of ensuring that you have not ordered an illegal order which may result in one of your fleets becoming lost in space.

Whatever movement orders you have given each of your seven fleets they should be checked against this chart. And if you can answer "Yes" to each of the questions set out there then the move is a valid one.

If you come up with a "No" then the order is illegal in that context. In order to protect your answers, some of the questions are phrased in an unusual way. The only one which may cause confusion is: "Was your first order anything other than a Raid order?" This is asked because no Raid order can be followed by a Stay order.

ANOTHER CHANCE TO ENTER

Every Seventh Empire player who wants to enter a batch of envelopes will be sent out. No postal rules in this batch but we'll put you ready, should any of the 25,000 fleets currently on the map, deep end. Send in the form below.

Please include me in the Seventh

Empire Competition.
I name my tribe:

My name is:

Address

Telephone

If you are new to the concept of Seventh Empire and want to find out how to make use of these two alien pages... read on.

The Seventh Empire is a unique one-way play-by-mail game. Readers send in their orders on the form opposite and then learn how they got on in the next issue of C&VG. There is no luck in the Seventh Empire and the skill lies in guessing how other players will have to move and taking advantage of the most profitable battles, trade routes or gateway jumps.

If you want to enter bit in the form below. But should you want to use these pages on a more simple level we will be setting an additional competition for non-Seventh Empire players in our August issue.

TAKE TO YOUR FLEETS

Welcome back to galactic conflict as the mighty space armies of our play-by-mail game clash again.

The fleets have been spread through the galaxy by our restored disc drives and the action is set to commence. You should all have received a note of your starting positions and personal code number. If not, ring us quickly.

To prevent losing new fleets in space, you should take an immediate copy of your code number for future reference.

And when you have filled in the form opposite then be sure and keep a copy of it so you can work out your space profits next month — and also realise where your next move will be starting from.

All orders must be back in the C&VG offices by **June 23rd** so be prompt in turning around your first batch of orders.

In case your rulebook is not to hand, we have included a checklist chart and a run down of all the possible moves.

And the prize for the top scorer at this turn is once again three software cassettes for his micro. By the December issue we should have an overall top scorer for the first six months and he will win himself the promised Colecovision games centre.

Ramambo to check your orders against the checklist chart to avoid errors which might lose your fleet in space. Any problems and your phone lines are open on Friday afternoons, phone 278 6558.

Imperial fleets are going to belong to the seven players who had control of them last time, even though their fleets may not be restricted to that particular empire.

O'Zans Empire: K Gaden, Port Isaac
Sinn Empire: R Archer, Taunton
Pavia Empire: P Nevins, Wexhampton
Bloodline Empire: S Birch, Whitby
Dead Empire: O Speight, Carlton
Amethyst Empire: B M Jones, Dax
Water Empire: S Chambers, Norwich

May the scourge of galactic piracy never share your trade routes.

SEVENTH EMPIRE MOVEMENT ORDERS

Key	ORDER	MOVEMENT	CONDITIONS
		MODE	
S	STAY	TRAVEL	Between empires at peace
M	MOVE	TRAVEL	Between stars of different types and empires at peace
T	TRADE	TRAVEL	Star of alien empire (phase 1)
R	RAID	ATTACK	To star of original empire (phase 2)
R	RETURN	ATTACK	Star of empire at war with original empire
A	ATTACK	ATTACK	
J	JUMP	GATEWAY	To another gateway star
C	CARGO	GATEWAY	To another gateway star
P	PLUNDER	GATEWAY	To another gateway star

The key refers to the computer code for the order but you should write it out in full.

SEVENTH EMPIRE

STATE OF THE GALAXY

A new galactic map has been formatted by the Computer & Video Games computer ready to act on your orders. The map includes fleet positions but no trade index until you have started your new trading missions.

But before you launch your seven revitalised space fleets back into the fray, digest the new information given below.

The Raid Penalty for this turn is 1 and that should be put into your Raid aqueducts.

The Diplomatic Diagram, given below is as we last saw it in the April issue. Those empires joined by lines are at war with one another and while two empires are not joined, fleets can trade and travel peacefully between them. For example D'Taan's empire is at war with only the Watai Empire and the Pirata Empire this turn.

We have also included a reminding diagram of the Star Types and their trade values.

The form for the first turn of the second Seventh Empire series is included bottom right and please remember that we can only accept entries sent in on that form — not photocopies.

FOZUZ ○	LAKUB ♦	YIBET ♦	XOLIP ♥	ITIL ♥	FUNUS ♥	LULIP ♥	YANOK ♥	XOKEG ♦	ISOX ○
VIZAK ♥	QIRUK ♥	HAAZAN ♦	ABOB ♦	SONER *	VEPOZ *	QATOT *	HEZOD *	ASOL *	SUXEK ♥
BAROV *	WIDAN *	RURUS ○	MUPIP *	NAXIG *	BETIO *	WAVAB *	RIVEY *	MEGUD ○	NABOK ○
DALIX ♥	OLEX ♥	TASAT ♦	CAZUV *	GOVAX *	QITUG *	OKAP *	TOXAZ *	CIXAN ♦	GOTEG ♥
ERAK *	KOVEP *	USUG *	PEBOB ♦	JADEG ♦	ENAK ♦	KEPAR ♥	UGON ♦	POROV ♦	JINIS *
FADIS ♥	LOKIK ♥	YUSES ♦	XAPUS ♦	IXIP *	FAGIL ♥	LIZAG *	YODAZ *	XUGOD *	IBED ♥
VASUX *	QUXIN ○	IIPEB ♦	ASOR ○	SIDAL ♥	VIZET ♦	QAVUV *	HAKUB ○	APEL ♦	SABAG ♥
BUREP ♥	WAGAP ♥	ROLEK ♥	MINEP ○	NUVEX ♥	BAZIX ○	WUTIV ♥	RORUL ♥	MEDEN ♦	NUZET *
DUSUP *	OPOD *	TUBOX *	CIGER ○	GAZOR *	DABAG ♥	OTAN ♦	TUXUX ○	CESER ♥	GIRIX ♦
ELAR ○	KERUP ♦	ULEB ♦	MIRAD ♥	JAXEL ○	EDOB ♦	KOLOL *	UKOP ○	PULUO *	JUVAK ♦

The Galactic Map

Star type Trade value

♥	Elixir	200
♦	Gem	150
○	Energy	100
*	Gateway	50

Star Types



The Diplomatic Diagram

Orders in Block Caps please

Name,

Code No.

Telephone No:

	AT	1st Movement phase		2nd Movement phase	
		ACTION	STAR	ACTION	STAR
FLEET 1					
FLEET 2					
FLEET 3					
FLEET 4					
FLEET 5					
FLEET 6					
FLEET 7					

to be moved to ... from ... to

Please notify us separately of any change of address.

There's a huge choice of mirrors around. Each with a different 'reason to buy'.

One might have fantastic graphics, but with a sound output like a pebble in a tin can.

Another may win every brownie point in the book on games. But with programming difficulties that make your brain ache (let alone your finger tips)...

For your mirror, it's no good having one star in the team. You need all-round performance that wins with flying colours (all 16 of them!). And backed by a knowledgeable dealer network that will help you explore the exciting world of mirrors.

THAT'S OUR GENIE

Owning one means that when you want to do something new, you won't have to throw away

months or years of experience. And you'll find that for whatever reason you first buy a mirror - you'll develop new interests immediately!

It means that once started, you can progress to be an experienced programmer. From fantastic games, to professional program applications

SOUNDS CHALLENGING?

It's meant to! Because Colour Genie is fast and powerful enough to offer you the most exciting challenges in entertainment and education, at home and at work.

PROGRAMMABLE

Fast Z-80 chip with very programmable Microsoft® BASIC Extended held in 16K ROM.

128 programmable characters with programmable screen for text and display. Plus 128 pre-set graphics on the keyboard.

A programmable function keys in each shift plus auto-repeat on all 63 keys.

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Screen text display is a full 40 across x 24 down. In this mode you can build up to 128 complex graphic shapes. Using the highest screen resolution of 5120 x 1024.

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LEARNABLE

Colour Genie even comes with 2 manuals. A beginner's guide, and one to take you through the first steps of BASIC. The English shorthand that the computer understands (shown here with optional joystick controllers).

SOFTWARE AVAILABLE

Find the Diamond of Balmorran
The Virgin Incident
Enchanted Garden (requires 32K)
Tad's Memoir
Space Fighters
Racing Driver
Mysterious Adventure Series (7 programs)
Invasion from Space
The Challenger
Dinosaur Attack
Zoo Editor/Assembler/Debugger
Gannon
Fortress of Evil
The Edeminator
The Graphics Master
The Deep
Double Agent
Electric Fish
Skramble
Kong
323
Wildscore
Jazztron
Snake
Music
Electronic Organ
Break Out Clonoids
Maze Code Transfer
Rocks

Enlight & Noughts and Crosses
Round Table (Adventure)
Murder at Gosforth Hall (Lisa Quade)
Mafia Strike
Galactic Attack
Mousemaze
Asteroid Mission
CEMERS (Carts 1 to 4 Basic Trans.)
Monster 3

File Handling
C.G. Copy
Writrix Practical Programs
CORPLAN (Business and Educational Software)
Character Generator (2 games on reverse side)
Word Processing

COMMANDABLE

SHAPE, SCALE, COLOUR, PAINT, CIRCLE, FILL, PLOT—the list goes on with more than 80 others.

Add more than 40 graphic, arithmetic and other functions. You can calculate with 16-bit integers. Colour

COMPOSABLE

Outstanding facility with 3 sound generation channels, independent or simultaneous with a full range of 8 octaves on each channel to give the synthesized sound of instruments such as drums, flute and harpsichord. A bomb, a car or a bird!

Programmable pitch, duration and volume.

Full noise. Special effects. Full enveloping. Plays through your TV or Hi-Fi (with on TV). SOUND

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The National Colour Genie Users' Group welcomes you! Free magazine every month for the beginner and the pro. Where to get software. Its own software.

User experiences, and to sell your software on Group's own label.



GUARANTEE-ABLE

Our optional 2-year breakdown guarantee underlines the reliability of Colour Genie. Only £16.50 from date of purchase.

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For everybody new to computers all the technical words are a bit of a mystery. But for Colour Genie you'll find excellent books which take you from wiring in the plug to how to get the best from the computer!

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PULLING



ANYTHING TO DECLARE?

These two passengers certainly have! Among the rather weird collection of items in each suitcase there are two which definitely do not belong with the rest. Can you deduce which pairs should be removed for inspection by the Customs Officer? Perhaps, too, you can state how these two contraband items are related to each other.

QUICK WEIGH IN MATRON

Quite early into a recent hospital visit I was surprised by a request to hop on the scales and be weighed. I had duly hopped before I had even begun my mumbled reason for being there — a desperate attempt to unload about a tonne of unwanted Re****'s D**** into the ENT waiting area.

And that explanation was cut short by a fearsome matron who burred me to a crisp with her acid enquiry as to whether I always weighed myself with an overcoat on.

It was some hours later that I realised what I should have done — dismounted, carefully taken my coat off, laid it over one arm and stepped back onto the scales again!

As it was I discarded the tonne and tied, taking some small consolation in sending, anonymously of course, this picture. If I have read her correctly it will take her some time to work out just how many TRIANGLES are needed to make the third pair of scales balance. Which should delay the processing of my sample for a week.

Readers of this magazine, however, are only allowed thirty seconds to complete this simple operation.

THE LOWEST DICE ROLL

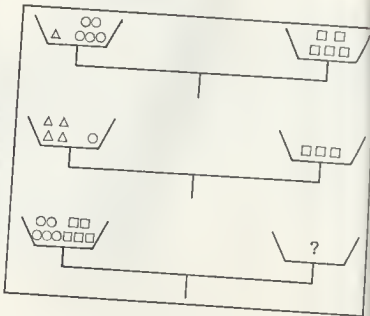
Summer is now recognised medically as the most dangerous season for us members of the new species, *fanaticus computicus*. It is the time when those mere mortals we live alongside feel the urge to remove a large quantity of their outer clothing and leap about shouting "thirty-fifteen", "Howzat Umpire" and "Mowed the lawn three times today!"

A strong urge comes upon us that we should also be doing something energetic and that the entire population is becoming fit around us.

But take heed... it can be fatal to kick the chair back and join in. A violent bout of croquet can ruin that typing finger. So here is a gentler way to move a few muscles, stimulate the brain, and so aid digestion.

Copy our diagram, making the squares large enough to accommodate whatever size die your Monopoly set is supplied with. Place the cube in the top left square so that the 1 is on top and the 2 is facing you. In all standard dice the 3 will now be on the right. (Note: dice other than standard are not allowed!)

A move is to roll the die by a quarter turn into an adjacent square, across or up or down — spinning diagonally over a corner is forbidden. After the move fill in the line you have just crossed with a pen.

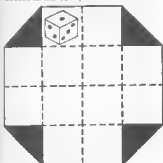


As you proceed on this rolling tour of the board you will gradually complete the sides of the squares. When you draw a line which finishes a square put a number in it — that number being the value showing on top of the die at the time.

The square just completed will either be the one the die is in or an adjacent square — occasionally you can complete two squares in one move; in which case enter the top die number into each square.

There is only one restriction on movement: if possible you must roll so that a new line is drawn — you may only roll over a previously drawn line if there is no other choice.

The exercise ends when you have completed every square and your effort can be measured by the sum of the scores in the 12 squares

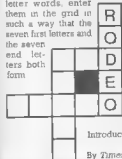


The challenge is to find the path which scores the lowest total! You may record your moves by noting the initial letter of the direction you move the die each time: Up, Down, Right, Left.

Entries should be written in the form of a list of moves and include a copy of the diagram with scores entered, and the total claimed. Usual rules apply and the editor's decision is final!

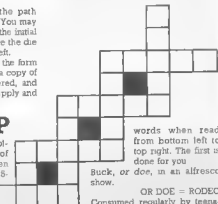
SEVENS UP

The solution to each of the following clues is an anagram of five consecutive letters. When you have found the twelve 5-letter words, enter them in the grid in such a way that the seven first letters and the seven end letters both form



Introducing a new cosmetic. Oil of the rose leaf.

By Timeshrinker



words when read from bottom left to top right. The first is done for you

Buck, or doe, in an alfresco show.

OR DOE = RODEO

Consumed regularly by teenagers

Complies, on demand, with decibel level. Bored Roman legions in part command. Taking third place in entitlement.

So may we deck the poor lieutenant.

One may have remarked upon such a detonation. Restrain passion until the wedding, please! Strike a light! It's out until further notice. Quite material consequence for an awful telephonist. The strange ritual of a jungle inhabitant.

A MANGLED MATHS MESS

When Paul Tutherford won his hatrick of detentions in one week (awarded for his believed frivolous calling out of "mangle" when asked to name one kind of angle) it was decided to make the punishment as ingenious as his classroom answers.

He was given this word sum which is so obviously correct that little development seems possible.

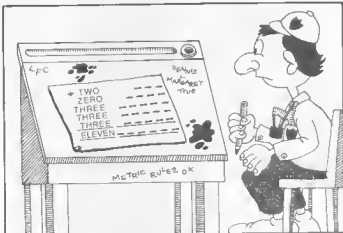
But, since there are ten letters being used and our counting system has ten

digits, 0 to 9, he was asked to replace each letter by a digit and convert the diagram into a valid addition sum.

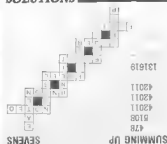
As always, the same letter stands for the same digit each time it appears and there are no leading zeros allowed.

Supper is in half an hour and fish fingers feature on the menu. Can you give the erring but likable lad a hand and tell him which letter represents which digit?

By Roger Myers



SOLUTIONS



SUMMING UP

131619
42011
42011
42011
42011
42011
42011
42011
42011
42011
42011
42011

18 triangles: 10 squares = 19 triangles

10 circles = 17 triangles (so

5 = 8) -

SEVENS

These four words are linked by taking,

called by BLUE.

and Spirit as all his words can be pre-

horn...). The gent should throw our Moot

Elephant — all the rest of her things take

GREEN as a prefix (green fingers, green

The lady should discard Feather and

UNAC-CUSTOMED

BY TREVOR TURAN



SAD IN MY SPACE SUIT

Rescue at *Rigel* appealed to me as a title, so I sent off for it, looking forward to an exciting sci-fi Adventure.

When the game arrived I waited with eager anticipation for the cassette to load, entranced by the illustration of a scantily clad lady manacled to an alien machine, being menaced by an overgrown ant. Just behind the ant, blaster in hand, was Sudden Smith, our hero, clad in a space suit. That would be me, I thought.

In the box with the cassette was a 32 page booklet. A quick perusal soon revealed that here was something very similar to *Heilfire Warrior*, (see *C&VG*, April '82), a *Dunjonquest* game.

A list of single letter commands was given, and a background story describing the objective — explore a hollow asteroid base orbiting *Rigel*, and rescue human prisoners by pressing "T" to teleport them to a waiting space ship. How exciting!

DWARVES WHO SPEAK ENGLISH

The parallel I drew a few months ago between an Adventure game and a story is exemplified in *The Hobbit* from Melbourne House, which runs on a 48K Spectrum.

The game is presented very much like a book — the "front cover" with full colour illustrated title is displayed whilst the program loads.

The game is a fairly close representation of the book, which is itself supplied as part of the package. The action of the game takes place in over 50 of the locations described in the book and depicted on the map of Middle Earth.

On the first visit to a location, a full colour picture of the surroundings unfolds, adding to the impression of a story-book game.

But the player should beware of gazing at the attractive pictures for too long — another feature of the game is "Aramation", whereby the various creatures go about their business inside the computer.

Messages appear spontaneously on the screen from time to time as a result of this background activity, which has

in play the rooms were drawn on the screen in slow motion, and movement across the rooms, by hitting keys 1 thru 9 plus L and R, had all the urgency of a slug on the attack.

To the right of the graphic display, if that it could be called, being entirely symbolic, were the usual fatigue and wounds statistics, with a couple of new ones indicating power in the power pack, and blaster bolts left.

The aliens, although looking like crosses, were actually a race called *Tollahs* — the superior ones being *High Tollahs*. Probably an American attempt at satire. If so, it left me cold, as did the rest of the game.

If you like *Dunjonquest* games, fine. But don't, like me, expect anything different in this game. I got the distinct impression that the intricate background story in the book was written around an existing formula to give it a new lease of life.

Rescue at Rigel, costing over £20, runs on cassette on a 32 K Atan or 16 K TRS-80, and on disk on 48K Apple, 32K Atari, or 32 K TRS-80. From Computer Magic.

an effect on the course of the game. While you dither, don't be surprised to see Gandalf or Thorin, up and leaving either.

The possible commands are very flexible. A language recognition program called "English" is incorporated, and "ATTACK THE TROLL CAREFULLY WITH THE SWORD" is recognised as easily as "RUN".

The game is linked to the story by a 16-page booklet which explains the grammar and vocabulary of "English", the split-screen mode of display, plus hints and tips on playing the game. If you are a *Hobbit* fan then you will enjoy playing the book and reading the game... I think?

The cassette costs £14.95 as it is sold with a paperback version of the Tolkien classic. If you don't know the story of *Bilbo*, *Gandalf*, *Gollum* and the dwarves and their epic journey across Middle Earth, it will provide a few clues to playing the game.

MUCH MISERY IN SCOTT'S FUN HOUSE

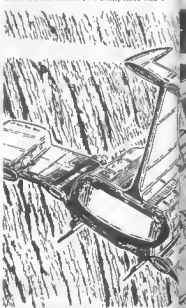
OK — I might as well admit it — I'm besotted! I have tried Scott Adam's *Funny Fun House* on and off for over a year, and still haven't solved it, despite a recent concerted attack.

Readers have been writing to me desperate for help — and I have deliberately delayed answering in the hope I might find the solution. But now I feel it is time to come clean... I can't solve this mystery.

In *Fun House*, the first problem is to get inside, a devious play typical of Scott. The clues are all there, and so with a self-congratulatory pat on the back I entered the house.

After being chuckered out a couple of times by a bouncer, found how to stay inside. Round I went pressing buttons and pulling levers — all in search of the missing plans!

I shot clay pigeons, met up with a mermaid, got deatened by a callopo, and unlocked the secret of a trampoline and a



BY KEITH CAMPBELL

YOU'RE NOT ALONE IN THE PADDED CELL

It is comforting when stuck in an Adventure to know you're not alone! Many readers write in desperation for help.

The interesting point is that their problems are fairly similar and tend to revolve around a small number of Adventures.

Perhaps these are the games intriguing enough to worry about! On this page help with these sticking points is often at hand!

I would like to help my mystery correspondent, recognisable by his distinctive notepaper, who writes variously as Bilbo from Bag End, and Desperato Adventuror from A Padded Cell!

Turn the page upside down Bilbo, to

discover how to cross the river. And please reveal your true identity next time!

Many thanks to Geoff Phillips of London HW9, who has enabled me to re-exist in Philosopher's Quest. For all those readers dying to know — it's really quite simple — just think like a philosopher!

Geoff also mentions that he took five seconds is a more realistic response time for an Adventure, since one cannot physically travel from room to room instantaneously. True, the first time around this is acceptable — the player is busy thinking ahead. But what about the poor devil trying from scratch for the 99th time, who knows his way into the middle of the game like his

twice times table and hasn't saved a suitable version? Any views, Adventurers? How often do you save your game at the crucial moment?

Troubled readers requesting help this month include two Bedlam players. Richard Jones can't get past a guard dog and Simon Clark wants to know how to get the green key from the electro-shock room.

G Keen from Down Under, has designs on the demise of a gargoyle in Tandy's Reaka-Tu. Can any readers, through me, help these troubled explorers to reach their goal?

And perhaps when you are similarly stuck one day, someone else will provide the clues to help you move on to the next room.

strange pair of spectacles. But what about the second bolt? And how do you get your fortune told?

Allan Miller of Richmond can answer the first question, but is still stuck, and complains that the hint sheet doesn't help either! This is borne out by Simon Clarke from Harpenden, who is not quite so far into Fun House yet. He strongly recommends not bothering with hint sheets whose usefulness he describes with a four-asterisk word.

Another Fun House sufferer is the Rev. Dave Byrne of Kings Horton, trapped at the bottom of a tank without even a mermaid to confound!

So we're all stuck at different places — and apparently all face insoluble problems. Surely if we're each capable of overcoming some of the difficulties which others thought impossible, it is within

each of our capabilities to reach the end? Just a matter of perseverance!

Back to the keyboard, Adventurers! And it's all about any luck — I'll let you know!

Fun House runs on TRS-80, Video Genie, Atari, Vic-20, Apple and Sorcerer, and is certainly one of Scott's most additively aggravating Adventures! Buy it if you want a real challenge.

● If you are struggling with an adventure and feel that you will never find a way around the problem, then my own small talents plus the might of C&VG's dedicated adventure players may provide the answer.

Write in to: Keith Campbell Adventure Helpline, Computer & Video Games, Durand House, Herby Hill, London EC1R 5JB. If I don't know the answer then I can always throw it open to the readers.

Please don't pick up a pen at the first sign of a problem. You will only get a full sense of achievement from a completed adventure if you have solved every problem yourself. So before you write in, give yourself a chance to solve the problem or find another way around it. If you can't succeed and half the adventure is never played because you cannot find a way round one particular problem then is the time to write to the Adventure Helpline.

SOME TIPS ON MY HINTS

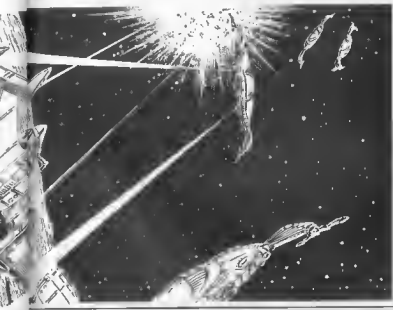
A few months ago I wrote some coded tips, and a deco program. A number of readers had trouble with this. I should have mentioned that the E was the printer's way of depicting a hash, or sharp sign.

Some machines didn't have all the testros used and a CLEAR 1989 statement was needed for a Tandy.

To avoid such problems in future, I will show clues upside down. Don't twist the page if you don't want help with Hobbit, Adventureland and Savage Island, Part 1.

HELP IS AT HAND

The cave.
water evaporated on the ledge outside
boy, give him salt made from bladder
Americo! To keep another bear at
To get past the thin bear, yell in
on using the boat.
then pulling it will enable you to cross
Sometimes it will land on the boat.
To cross the river, throw the rope.



GRAPHICS

By Garry Marshall

MAKE SENSE OF WHAT YOUR MICRO "SEES"

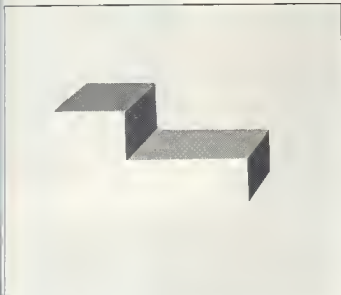


Figure 1: look no edges but a recognisable shape.

A computer can make sense of what it is seeing when it is presented with line drawings of simple three-dimensional objects. It can run a program that automatically determines which edges jut outwards and which go inwards so that the three-dimensional shape of an object can be worked out from a two-dimensional drawing of it.

Unfortunately, when the computer is seeing the real world it does not see line drawings but, rather, more or less what we see.

However, it is not too difficult to reduce an ordinary image of a scene containing three-dimensional objects to a line drawing. A method for doing this can be explained with reference to figure 1.

An examination of this figure will prove that the image shown in it has no drawn edges. Yet the human observer has no difficulty in detecting its edges. Edges are perceived wherever there is a sharp change in the shade of grey.

A computer can be programmed to detect the edges in a picture using the same idea. An image of a

scene can be turned into a line drawing in the following way
1. Convert the image into numbers by measuring the shade of grey in each square of a grid covering the image and compiling a corresponding array of numbers.

This can be done by measuring the intensity of the light reflected from each square. The part around the angle of the L in the L-shaped object shown in figure 1 will give the following array of numbers when it is covered by a grid with 5 rows and 5 columns.

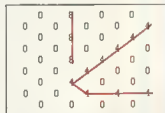
10	10	2	2	2
10	10	2	2	6
10	10	2	6	6
10	10	6	6	6
10	10	10	10	10

Light into numbers.

2. From this array of numbers find another array giving the differences between adjacent numbers both horizontally and vertically. This array will show differences in intensity, which is what we are using to detect edges. The new array is in this case

0	8	0	0	
0	0	8	0	4
0	0	8	0	4
0	0	8	4	0
0	0	4	0	0
0	0	4	0	4
0	0	0	0	

3. Join adjacent entries with similar values in this new array. The lines obtained in this way should give edges in the original scene. In our case the following lines are obtained

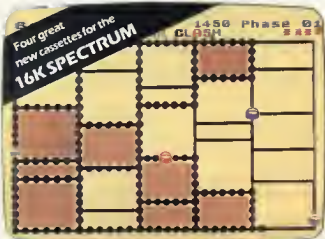


This gives the arrowhead junction of lines that occurs in the part of the object that we examined.

In this way a computer can be programmed to see by running a program to extract the edges from a picture of a real-life scene and then running a program to determine the meaning of the line drawing formed by the edges.

In a very general way, this is what happens in the brain and eye when we see things. It also helps to explain why we can recognise cartoons and caricatures so easily.

They are composed of lines, so that edges are presented directly. Consequently the brain does not need to perform its usual first stage of extracting edges, but can start its work at a higher level than it can with an ordinary picture.



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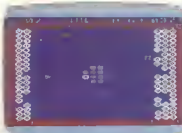
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TRACK DOWN THE NASTY SIZZLING ALIEN ENEMIES

JETPAC

Building your rocket and fuelling it is the idea of the latest game from Ultimate.

The tape loaded successfully first time and while the game was loading an impressive life screen was displayed.

The game starts with a rockal ship in three parts. This has to be assembled by picking up each of the pieces in order and dropping them onto the base segment which is already in position at the bottom of the screen.

Once the rocket assembly is complete, you will need to get six fuel pods on board by picking them up as they appear randomly on the screen and dropping them into the craft.

When fuelled, you can board the ship yourself and blast off to the next planet where a similar task faces you.

If all this sounds too easy, then you probably haven't heard about the thousands of aliens who inhabit each planet and air. "In desperate need of blowing up" You are equipped with a laser weapon with which to do this and also a jet-powered transport system strapped to your back, hence the title. If you are hit by an alien then you lose one of your four lives. On the first screen the aliens are not too difficult to avoid but on subsequent planets they become more intelligent and are able to track you with ever increasing accuracy.

Jetpac is very playable, addictive and original arcade type game. The graphics

era superb but the sound effects bore a striking similarity to a pan of frying eggs and bacon. By the time I reached the fourth planet I was starving!

The choice of movement keys is well thought out, although the program also accepts a joystick from Kemson.

Jetpac runs on any ZX Spectrum and is for one or two players. It costs £5 from Leicester-based Ultimate and comes complete with a five year unconditional guarantee which can't be beat.

- Getting Started 9
- Value 9
- Playability 9

BUGS HINDER THE GREAT COSMIC ESCAPE

ESCAPE FROM ORION

Escape from Onon is the last Donkey Kong style game to come under the scrutiny of our BBC reviewers.

As the first software house to attempt such a complicated arcade to home conversion Hopesoft are to be congratulated for their pluck.

That is where the congratulations have to end. The game fails on a number of counts.

Although it gives you four screens of graduated toughness they are not interactive. When you have completed a screen one you do not automatically go on to screen number two, but must go back to the menu and select the next stage. Effectively it's like playing four separate games.

The next genre is either as a result of a bug or bad design. You cannot go up the ladders that connect the various levels but



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E SOFTWARE SOFTWARE SOFTWARE
REVIEWSA BLADE HUNTER
FINOS IT HARD TO
KEEP RUNNING

BLADES OF BLACKPOOLE

Blade of Blackpool is one of those adventure games.

You know the sort I mean. After travelling a couple of miles North, South, East, or West you come up against something that you just can't shift, get past, kill, cajole or bribe.

In the Blade these objects come in the shape of an ugly man-eating plant, a boat which cannot be rowed, sailed, or peddled, a landslide which you cannot climb, tunnel under, or walk around, and a patch of quicksand which is determined not to let you cross.

That's as far as I got. Heaven knows what lies beyond.

So why can't you sail the boat? I'm sorry I can't answer that.

All right then, so why can't I climb the landslide? I'm sorry, I can't answer that.

That's about as much advice as this reviewer can offer on penetrating Blackpool so I may as well tell you about the plot and the graphics. Anyway, even if I knew secrets, I wouldn't tell you.

Plot is strong. You are searching for the magical sword of Myraglim. Rumour and legend talk of a secret chamber near Blackpool in which the sword is said to lie. Discovering the blade is only half the battle. It must now be returned safely to its rightful place on the altar from whence it was stolen.

The lost blade is the source of great evil in the world as man have taken up arms against their fellow man in the quest for the blade, their rightful vocations in the world neglected, with the serpents and man-eating plants allowed to extend their evil over the kingdom.

Fine, but who am I? I'm sorry, I can't answer that.

Graphics are reasonably good. The game uses the window picture system at the top of the screen with the text flashing up beneath.

Tolkien-esque, with large expanses of land, shrub-like trees and sparse vegetation — the illustrations enable you to easily lose yourself in the mythical land of Blackpool.

I liked this game, even if my novice's lack of adventures know-how stopped me getting very far into it. The important thing is that the game captured my imagination sufficiently to keep me coming back for more.

Blade of Blackpool runs on Alan 800 with 48K. It is available on disc from Calisto of Birmingham, at £28.95.

● Getting started

2

● Value

8

● Playability

6

CONTROLS HINDER
THE WOULD-BE
MISSILE KILLER

CITY DEFENCE

Another variation on the Missile Command theme for the Dragon, but different enough to be interesting. The player has a central base from which he aims his defences against beams gradually creeping down the screen at angles, each aiming for one of six cities also at the bottom of the screen.

By moving his joystick, the player moves his sight, which he must accurately place on the end of a moving beam and press the button to destroy it.

Beams hitting a city will destroy it with a

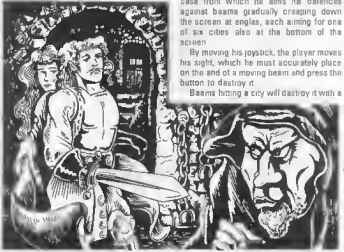


Illustration: David Cross

suitable noise, beams being put out of action toward the player with triumphant music and points.

There are four levels of difficulty which varied the speed at which the beams descended. I found that only the easiest level gave the player much chance.

This was because the defence sight consisted of a flashing square which seemed to be invisible more often than seen. The joystick required only very slight movement to control the defence sights, and overshoot was far too easy when the sight was invisible. This made playing very much a matter of guesswork.

An interesting game, but the weakness in control spoiled it. The game is available from Shird Software of Brentwood, Essex at £5.95.

- Getting started 10
- Value 5
- Playability 6

ONE FOR THE YOUNGER MICRO GAMESTERS ...

FUN AND GAMES

A compendium of ten simple games for the Dragon 32 including noughts and crosses, and, would you believe — computer controlled musical chess!

My first reaction to this tape was that the games were rubbish — Noughts and Crosses was a piece of cake to beat, Anagram too complicated to control with a time limit, and Snap was basically a sequence of numbers which equated the space bar to be pressed if two of the same number appeared consecutively. The matches were so few that I nearly fell asleep.

However, the rest of the tape had Pin the Tail on the Donkey, which required a blindfolded player to operate the joystick, guided by the pitch of a sound, Musical Chairs controlled the cassette player, into which a music tape had to be inserted.

Eventually, I came to the conclusion that here was an excellent collection of party games for younger children aged 5 to 9.

As some of the games seemed fairly simple, not requiring the full memory available in the Dragon, I felt it was a pity that a number of games were not merged into fewer separate programs, to be called up from a menu entry. This would have avoided frustration whilst the favourite game was found on the tape, or while each was separately loaded. From Shird Software of Brentwood, Essex, at £6.75.

- Getting started 10
- Value 6
- Playability 8

ALIENS WILL GET YOU IN THE ENO SPACE SKIPPER!

PARSEC

If you enjoyed Scramble then you'll love Parsec from Texas Instruments for the TI 99/4c computer. It's an all action scrolling game on a solid state cartridge with 16 skill levels which should satisfy even the most demanding Scramble ace. And it talks to you!

You control the Parsec patrol ship and are confronted by a series of nasty aliens — all of which want to do you harm in the worse possible way.

You blast away at the aliens as they sweep past — and some of them have the audacity to actually shoot back at you!

There are six types of aliens, ranging from the relatively harmless Swoopers to the really hateful Byndas, with a few Saucers thrown in along the way for good measure.

Once you have wiped out all waves of the alien ships — no easy task this — then you must face the dangers of an asteroid belt. You must blast a path through with your overworked laser cannon. Oh yes, a nice touch is the overload factor on your laser weapon. Should you think you can fire away with gay abandon then you've got a nasty shock coming. The cannon can overheat and destroy your craft as certainly as any alien missile.

Then there's that synthesised voice which warns you of attacking ships or when your fuel is running low. The warning often comes in handy during the more difficult levels of the game — especially when your joystick hand starts to seize-up on the rather uncomfortable Texas joysticks. However the game will work without the speech box.

Talking about refuelling. This is done by guiding your ship through a refuelling funnel on the planet's surface.

Second level play is similar to the first except that alien ships have to be hit twice to be destroyed. Also in level two the Bynda ships become invisible when hit once — but continue to fire at you until you succeed in hitting them again. The voice box comes in useful here too — it tells you when a laser blast has hit the target!

Things get faster and more furious as you progress through the different levels making Parsec a challenging space shoot out. The game will be available at Texas dealers and will cost £31.00.

- Loading 10
- Value 7
- Playability 6

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INTRODUCING THE BUG HUNTER

There are times when computer magazines lose sight of their main objectives.

Here at C&VG we have been guilty, more than once, of making things difficult for our readers. Texas owners who struggled with Pompeii and Skating will testify to the problems they faced in reading the listings on a far from suitable background.

We're full of good intentions but occasionally we get caught out and then the letters from you ever-alert readers flood in to tell us.

What you needed, we decided was a reader on the inside. Someone who could watch over us and make sure that we didn't transgress.

As of next month Robert Schiffrin takes that post. Robert has been a reader since day one and is not going to be slow to take us to task when things go wrong.

Robert has sifted through our July programs with a magnifying glass, double-checking our reviewers' comments, and has pronounced them free from bugs — Snag Junior was caught sneaking in one and quickly chased out!

But, from experience we know that the Bugs will be doing their utmost to get back in and to thus end we are giving Robert a regular page.

Our August issue starts the Bug Hunter column. Robert will be in residence each month, giving tips on the games, telling you where we fouled up.

Help is only a letter away if you are having difficulties with a program. And should you have a strong idea for some machine advice you would like us to print, then write to Robert and he'll do his best to find out himself or commission an article from an expert.

Now you readers have got a man on the inside, you should really be able to keep us on our toes. Make good use of Bug Hunter and read his first column next issue.

Laser disc technology has found its way into the arcades with Astron Belt from Sega.

If you are not familiar with the ideas behind laser disc games, it involves using real film on a laser disc and a computer which switches to the part of the

NEXT

film which corresponds with the player's actions.

So if he just shot an alien fighter craft, the piece of film showing the craft exploding is flashed onto the screen.

The arcade industry is predicting that laser disc games are likely to pave the way into the future. But costs have still got to be brought down and teething problems sorted out.

Next month we check out Astron Belt in Arcade Action and find out what you can expect for your 40p.

As grand prizes go
we've got one which is five times grander than most

We are running a summer programming competition with £5,000 up for the first prize.

Birmingham's Calisto Software are behind the competition as they are trying to search out some home-spun programming talent and everyone who enters could be a winner, ending up with a software contract for their game.

We launch the game in the August issue and you will have three months to come up with your winner and send it in.

The first prize will be presented at the November Branwave consumer electronics exhibition. The competition is free to enter and open to anyone.

All the details plus that all-important entry form can be found in next month's C&VG so, if you think you've got a winning game in you, make sure you get hold of an early copy.

This august journal has some high hopes for its August issue and to that end we have managed to fill it with sparkling gems on the programming front.

Pat Norris is back for Spectrum owners with an interstellar warfare game called Space War for the tactically-minded among you.

One of the most original arcade-type games we've ever seen has come in on the Vic-20. Brick-up involves the player in surrounding and bricking in a particularly deadly variety of alien. It's fast and



MONTH



difficult and very addictive.

Sharp owners will be able to renew their acquaintance with Fred the Repairman. This time Fred is faced with faster sparks in the microchip he is repairing but he is armed and ready for action.

There's a marvellous game called Ladder Maze and Galactic Landers and a breath of country air with Fox and Hound. Will you be able to outwit Farmer Brown's faithful hound?

Then there's Bug Battle, an insect invasion for Atom owners. But don't rely on the fly spray — these bugs are really mean!

All-in-all we're hoping to get the summer holidays off to a warm start, so dust off the computer and get ready for action.

Confessions of a Bug

We were only entering into the spirit of the thing after all.

But no matter, Oric owners weren't impressed. It was T. Hitch's idea anyway to add a few little snake-like creatures to the Oric listing last month but we upset a few people.

The little snakes on the listing should not be there at all. In line 30 turn the snake squiggle into a closed quotes and ignore those at the top of the listing.

Yours Mal.

COMPUTER GAMES TOP TEN

Sinclair Spectrum

- 1 Flight Simulation (Psion)
- 2 Hobbit (Melbourne House)
- 3 Penetrator (Melbourne House)
- 4 Transylvania Tower (Dk Shp)
- 5 3D Tanks (DK Tronics)
- 6 Horace Goes Skiing (Psion)
- 7 Sentinel (Abacus)
- 8 Galaxians (Artic)
- 9 3D Escape (New Generation)
- 10 Chess (Psion)

Vic 20

- 1 Panic (Bug Byte)
- 2 Alien Blitz (Audigenic)
- 3 Asteroids (Bug Byte)
- 4 Arcadia (Imagine)
- 5 Cosmids (Bug Byte)
- 6 Wacky Waiters (Imagine)
- 7 Blitz (Commodore)
- 8 Alien Blitz (Audigenic)
- 9 Skrambla (Rabbit)
- 10 Choplifter (Audigenic)

Atari 400/800

- 1 Defender (Atari)
- 2 PacMan (Atari)
- 3 Galaxians (Atari)
- 4 Zaxxon
- 5 Qix (Atari)
- 6 Miner 2649'er
- 7 Centipede (Atari)
- 8 Astro Chase
- 9 Preppie
- 10 Floyd of the Jungle

ZX-81

- 1 Flight Simulation (Psion)
- 2 QS Scramble (Quicksilver)
- 3 Monster Maze (New Gen)
- 4 Galaxians (Artic)
- 5 Space Raiders (Psion)
- 6 Chess (Psion)
- 7 Nightgunner (Digital Int)
- 8 Avenger (Abacus)
- 9 Asteroids (Silversoft)
- 10 Mazogs (Bug Byte)

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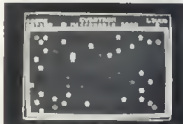


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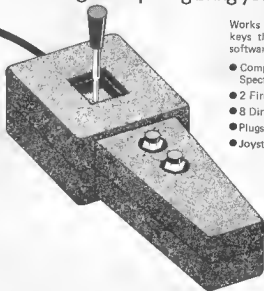
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